JVC NIVICO

No. 3169
May. 1973

SERVICE MANUAL

MODELS 4RD-1405/U/F

4-CHANNEL STEREO TAPE DECK

Dimensions : 19.3cm(H) × 40.6cm(W) × 34.3cm(D)
7-5/8"(H) × 16"(W) × 13-1/2"(D)

Weight : 10 kg (22 lbs.)

SPECIFICATIONS

Power supply	:	AC 120V, 60Hz (4RD-1405) AC 220V, 50Hz (1405F) AC 100/120V, 50/60Hz (1405U)
Power consumption	:	30W
Fuse capacity	:	2.3A
Recording system	:	4-track stereo (4-channel)
Bias system	:	AC bias, 57kHz
Erase system	:	AC erasing
Tape speed	:	19cm/s (7-1/2 ips), 9.5cm/s (3-3/4 ips)
Wow and flutter	:	0.07% RMS at 19cm/s (7-1/2 ips)
Recording time	:	45 min. (using LPT at 19cm/s, 4-channel) 90 min. (using LPT at 19cm/s, 2-channel)
Fast forward time	:	160 sec. with 7" reel
Rewind time	:	160 sec. with 7" reel
Output terminals	:	AUX output terminal × 4 0~+2dBS variable within 0 ~ 1.2V, output impedance 4.7kΩ
Transistors and ICs	:	11 transistors, 4 ICs
Diodes	:	6 diodes, 1 Zener diode
Frequency response	:	20~20,000Hz at 19cm/s (using low noise tape)
S/N ratio	:	52dB (from peak level)
Crosstalk	:	Better than 50dB
Distortion	:	Better than 1.5% in normal recording/playback
Rec/play compensation	:	NAB
Input terminals	:	MIC terminal × 4,64dB 10kΩ AUX input terminal × 4 477mV 20dB 100kΩ
REC/PB terminal	:	Max. sensitivity, 15mV 34dB (signal source impedance, 80kΩ) rated output, 0.5V (variable within 0~0.8V) output impedance, 10kΩ

FEATURES

* 4-channel recording and playback
* Mechanical automatic stop
* Low noise/normal tape selector switch
* ICs
* Tape easy loading
* Tape cleaner
* High sensitivity level meters

NAME AND FUNCTION OF PARTS

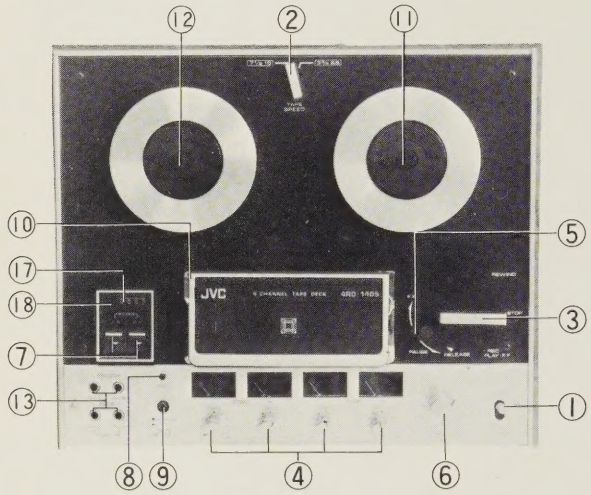


Fig. 1

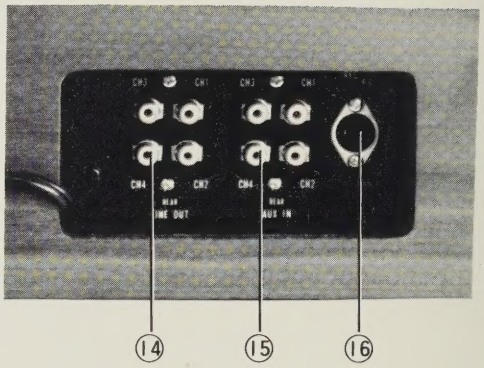


Fig. 2

1. Power switch

When this switch is set to ON, the set is powered and the level meters are illuminated.

2. Tape speed selector lever

Tape speed can be changed from 19cm/s to 9.5cm/s.
Be careful not to change the tape speed during fast forward and rewind.

3. Operation button

REW .....rewind
STOP .....stop
PLAY .....recording/playback

4. Channel volume control knobs (4 knobs)

Use these knobs to control the sound volume of each channel during recording and playback.

5. Fast forward and pause lever

FF .....Set the lever in this position to fast forward the tape during playback.
PAUSE ..During recording or playback when the lever is set in this position, it is locked and the tape pauses. Push the lever in the direction of arrow, then the lever is released and the tape restart for recording and playback.

6. All channel volume control knob

Use this knob to control the volume of all the channels in recording and playback.

7. Recording buttons (one for CH 1-3, one for CH 2-4)

Use these buttons only in recording.

8. Recording indication lamp

Pull one of the recording buttons (7) in the direction of arrow, then a lamp is lit to show that the set is in the recording mode.

9. Low noise/normal tape selector switch

10. Automatic stop mechanism

An automatic stop switch is mounted within the headcover.
When the tape breaks or ends, the switch operates to automatically restore the operation button (3) to its STOP position and the motor is disconnected from the power source.

11. Take-up reel disk

12. Supply reel disk

13. MIC terminals (4 terminals)

14. External output terminal

15. Auxiliary input terminal

16. REC/PB terminal (DIN)

17. Tape counter

18. Reset button

REMOVING MAIN PARTS

1. Removing top panel and control panel

1) Loosen the setscrew of the operation lever (1) and remove the lever.
2) Loosen the setscrew of the tape speed selector lever (2) and remove the lever.
3) Loosen the setscrew of the fast forward and pause lever (3) and remove the lever.
4) Open the headcover and remove a screw (4) holding the top panel.
5) Remove the four screws (5) holding the top panel and remove the top panel. Maintenance and simple repair of the mechanics is done in the following manner.
6) Remove the five volume knobs (6) and (7)
7) Remove the two screws (8) holding the control panel and remove the control panel.

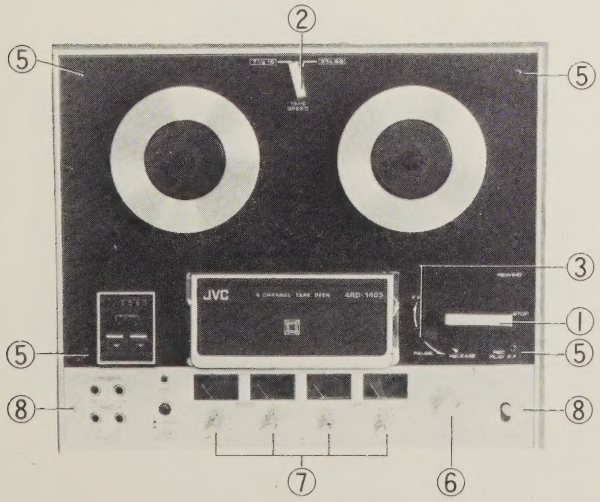


Fig. 3

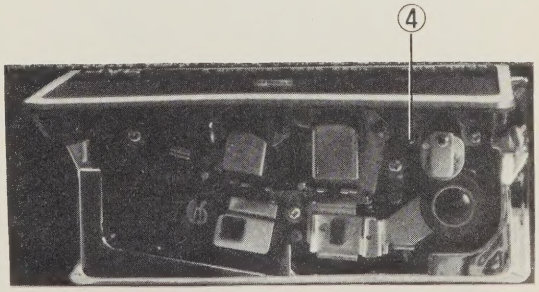


Fig. 4

2. Removing cabinet

1) First remove the top panel and control panel according to 1. 1) — 7).
2) Remove the two rubber pieces (9) from the rear of the cabinet.
3) Remove a screw (10) from the rear of the cabinet.
4) Remove the three sets of nuts and washers (11) and (12) holding the set proper and remove it.

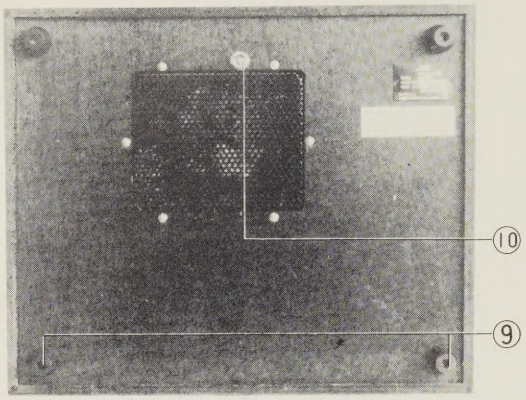


Fig. 5

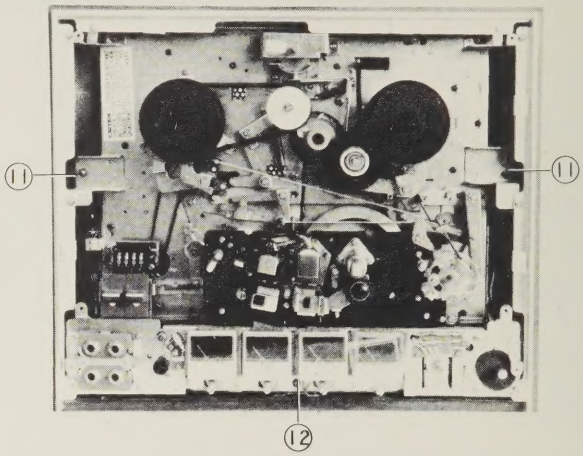


Fig. 6

3. Removing amp

Taking the set proper out of the cabinet, you can check all the circuits. Replacement of parts can be done in the following order :

1) Recording/playback amp (Fig. 7)
   Remove the five screws (5) and remove the circuit board.
   Be careful to raise the circuit board first by the edge facing toward you.
2) Jack board (Fig. 8)
   Remove the two screws (4) and remove the jack board.
3) Power circuit board (Fig. 9)
   Remove the four screws (1) and remove the power circuit board.

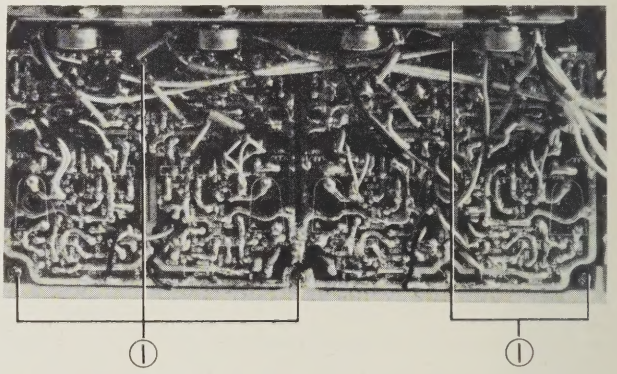


Fig. 7

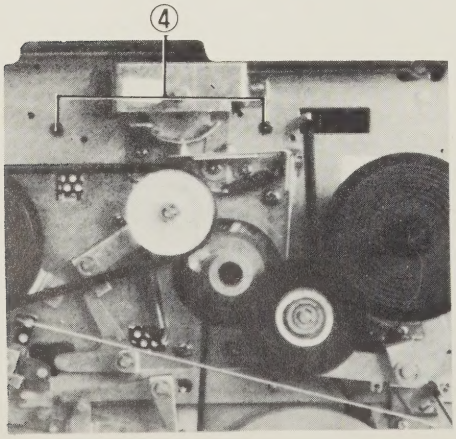


Fig. 8

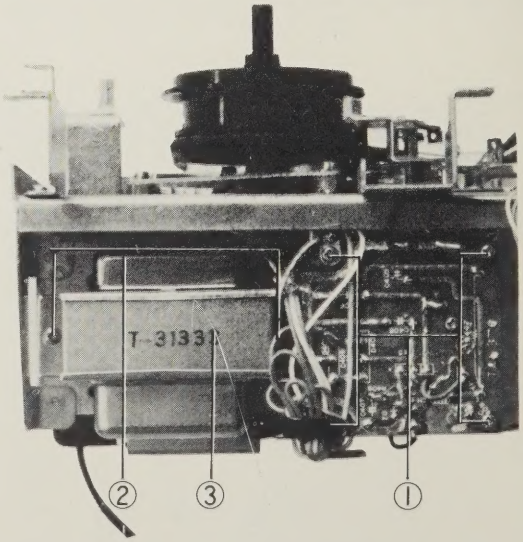


Fig. 9

4. Removing power transformer (Fig. 9)

1) Take out the set proper according to 1, and 2.
2) Remove the two screws (2) holding the power transformer.
3) Disconnect the wiring for the power transformer and remove the power transformer (3).

5. Removing motor (Fig. 10)

1) Disconnect the soldered portions of the three leads from the motor.
2) Disengage the capstan belt from the motor pulley.
3) Remove the two screws (1) holding the motor and remove the motor.

6. Removing motor pulley (Fig. 10)

1) First remove the motor according to 5.
2) Loosen the two setscrews (2) of the motor pulley and remove the motor pulley.

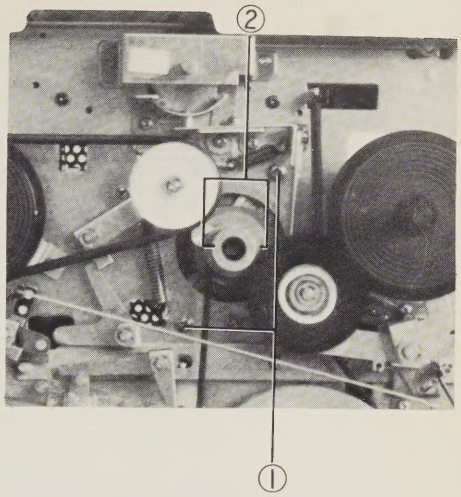


Fig. 10

Cautions

When replacing the motor pulley, pay atentions to the following points :

1) Fix the motor pulley with the two setscrews (4) so the botton surface of the motor pulley is 1.5 — 2mm above the motor mounting surface as shown in Fig. 11.
2) After mounting the motor on the chassis, check the capstan belt (5) can be shifted smoothly each time when the tape speed is changed. Also check that the capstan belt (5) is not in contact with the change rod (6) after the tape speed has been changed. If the tape speed cannot be changed properly or when the capstan belt is engaged with the change rod, loosen the screw (7) and adjust the height and position of the change rod (6).

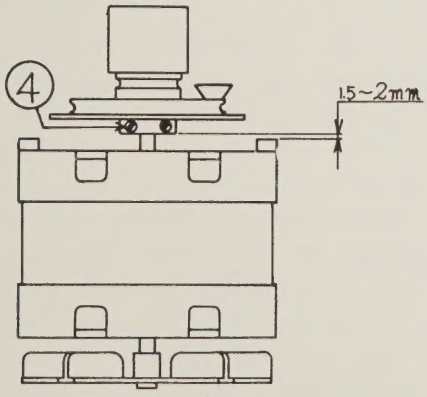


Fig. 11

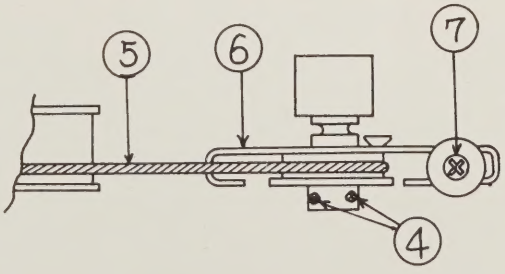


Fig. 12

7. Removing capstan assembly and capstan belt

1) Remove the spring (1) and spring plate (2).
2) Remove the E-washers (3) and (4) and remove the pause lever (5) and lever (6).
3) Remove the washer (8) holding the mode lock lever (7).
4) Remove the E-washer (9) and the two screws (10) and (11) and remove the fast forward lever (12).
5) Remove the two nuts (14) fastening the fast forward wire (13) and disconnect the fast forward wire.
6) Remove the two screws (15) and remove the holder bracket (16).
7) Disengage the capstan belt (19) from the motor pulley (17) and change rod (18).
8) Remove the four screws (20) holding the mounting the plate.
9) Now the mounting plate assembly, capstan assembly and capstan pulley can be removed.

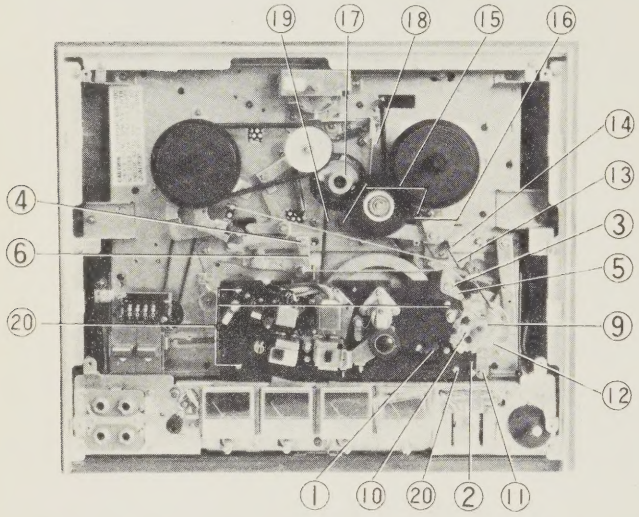


Fig. 13

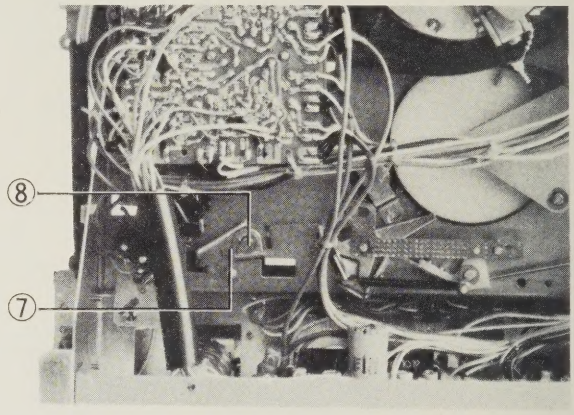


Fig. 14

MAJOR ADJUSTMENTS

1. Replacing and adjusting the heads

Replace the recording/playback head and erase head when excessively worn, excessively magnetized, internally disconnected and cannot provide specified performance.

Replacing the recording/playback head

1) Remove the tape pad assembly from the head plate.
2) Remove the two head mounting screws and remove the recording/playback head.
3) Attach the new head in the reverse order.

Adjusting the heads

After replacing the heads, adjust the height, azimuth and bias of the heads and the angle at which the tape pads engaged with the heads.

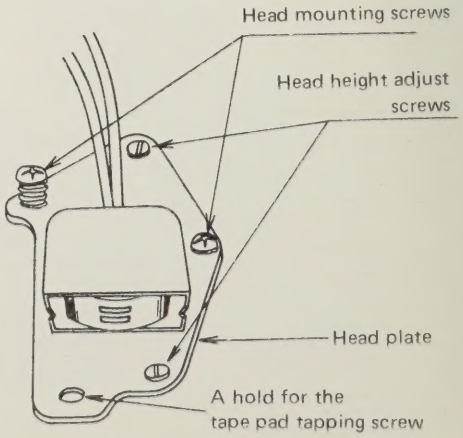


Fig. 15

a) Adjusting the height

Care must be taken in adjusting the head height.
Otherwise sound will enter from the other channels causing excessive crosstalk. Adjust as shown in the drawing.

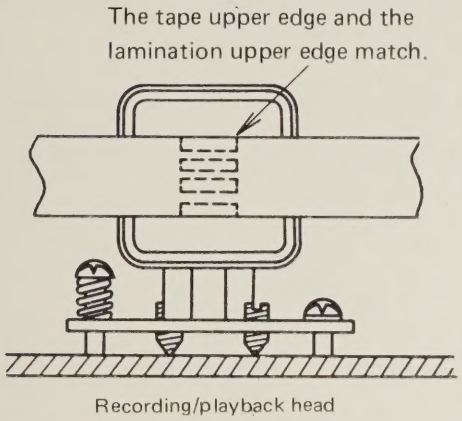


Fig. 16

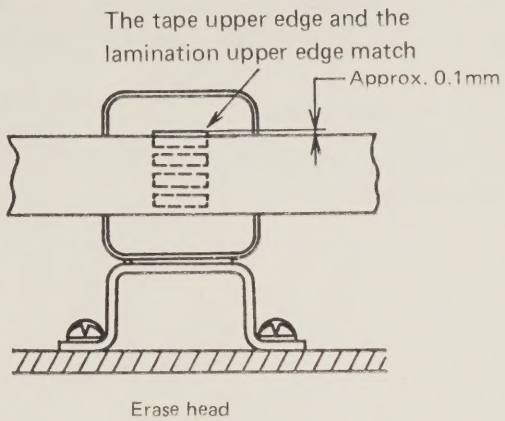


Fig. 17

The height adjustment of the recording/playback head is carried out with the two height adjust screws of the head plate. While making the adjustment, use the tape leader or remove the magnetic coating from ordinary tape so it is transparent, so the head laminations are visible.

b) Adjusting the azimuth

When adjusting the azimuth of the recording/playback head, connect a VTVM to the external output terminal (LINE OUT) and playback the azimuth adjusting 15kHz signal recorded on the AMPX standard tape (01-31321-04 or 01-31321-01) at a tape speed of 19cm/s. and rotate the left side head mounting screw until the output is maximum and secure in that position.

Perform this adjustment for each of the CH-1, CH-2, CH-3 and CH-4. If there is variation of the angle between the channels, set in the center. After completing the adjustment fix the head mounting screws with paint.

c) Adjusting the bias

When the recording/playback head has been replaced or when the recording/playback frequency response is not sufficiently good, adjust the bias. When adjusting the bias, first apply a 1kHz, 10 — 0VU signal to the MIC or AUX IN terminal and record the signal at a tape speed of 19cm/s. Turn the bias adjust knob until the playback output drops from the maximum (by --0.5dB) and set in that position. Fix with No. 150 Scotch tape.

Note *The bias value is rated A, B and C marked on The side of the head. The optimum values are as follows :*

A 600± 50μA
B 700 ± 50 μA
C 500 ± 50 μA

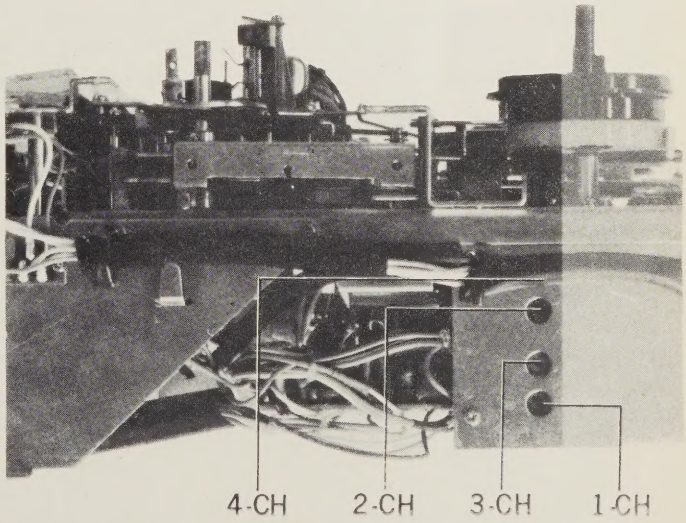


Fig. 18

2. Adjusting the level (see the "BLOCK DIAGRAM")

1) Adjusting the playback level

Set the tape speed selector lever to 19cm/s, set the channel volume control knobs and all channel volume control knob to the mark and connect a VTVM to the LINE OUT terminal. Load a standard tape on which a 700Hz standard level signal is recorded and set the tape deck to "PLAY". Adjust the playback level adjusting semi-fixed resistors (R14, R114, R214 and R314) attached on the front side of the amp chassis so the output is 0dB (0.775V). In the same manner adjust the level meter adjusting semi-fixed resistors (R21, R121, R221 and R321) so the deflection of the needles of the level meters are "0".

3. Adjusting the tape speed

The tape speed may sometimes change due to the change in the power frequency. The tape speed can be changed by replacing the motor pulley.

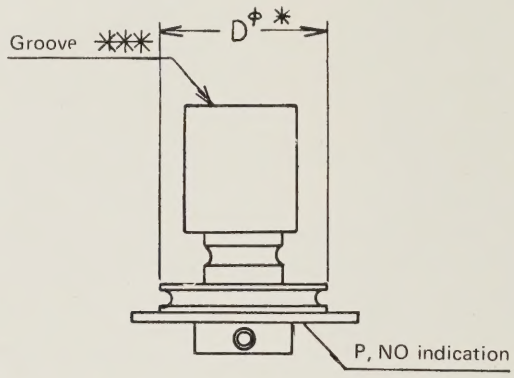


Fig. 19

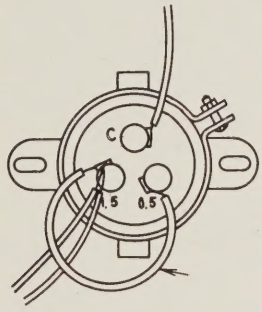
Motor pulley selection

		Part No.	Diam.(cm)	P, NO indication	Groove
50Hz	When tape speed is too high	T45430-001	38.06	1	No groove
	Standard	T45430-002	37.51	2	〃
	When tape speed is too low	T45430-003	36.96	3	〃
60Hz	When tape speed is too high	T45430-004	31.62	4	Groove
	Standard	T45430-005	31.17	5	〃
	When tape speed is too low	T45430-006	30.72	6	〃

POWER FREQUENCY CHANGE

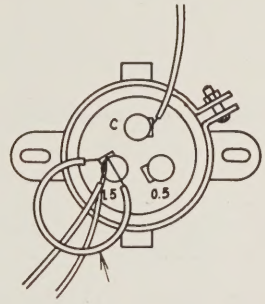
When the power frequency is changed from 50Hz to 60Hz or vice versa, replace the motor pulley and change the wiring and capacity of the phase advance capacitor.

	Motor pulley	
From 50Hz to 60Hz	Replace 50Hz motor pulley T45430-001 — 003 with 60Hz motor pulley T45430-004 — 006	Change the wiring of the phase advance capacitor (Fig.A→ Fig. B).
From 60Hz to 50Hz	Replace 60Hz motor pulley T45430-004 — 006 with 50Hz motor pulley T45430-001 — 003	Change the wiring of the phase advance capacitor (Fig. B→Fig. A).



For the 50Hz power frequency,
connect the 1.5μ terminal to the 0.5μ terminal.

Fig. 20



For the 60Hz power frequency,
disconnect the 1.5μ terminal from the 0.5μ terminal.

Fig. 21

MAINTENANCE AND LUBRICATION

1. Recording/playback head and erase head

As the heads are most important parts that have an decisive influence over the performance of the tape deck, their surfaces must always be kept clean. Clean the heads in the following order. First raise the headcover by the edge facing you and open it to the vertical position.

Wipe the head surface with soft cloth soaked with alcohol or benzine. At the same time wipe the tape guide, shifter, capstan, pinch roller, etc. The heads are usually magnetized after a long period of use.

Demagnetize them using a head eraser.

The motor is so designed that it operates in good order without lubricating for 2,000 hours.

However when the set has a thorough overhaul, apply one or two drops of DTE oillite to the metal portion as shown in the drawing.

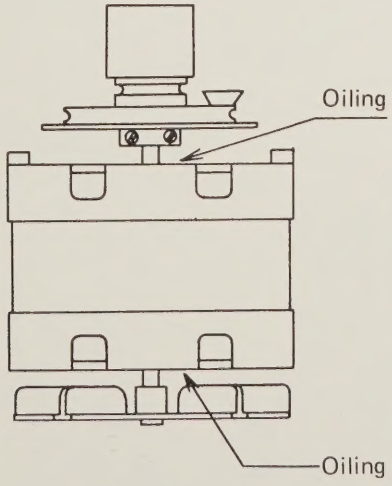


Fig. 22

2. Mechanical assemblies

1) Idler, pinch roller, belt, etc.

Wipe rubber surfaces of idler, pinch roller, belt, etc. with soft cloth soaked with alcohol etc., and at the same time wipe the associating surfaces which are in contact with these rubber surfaces. Apply one or two drops of oil every about 500 hours of use as shown in the drawing.

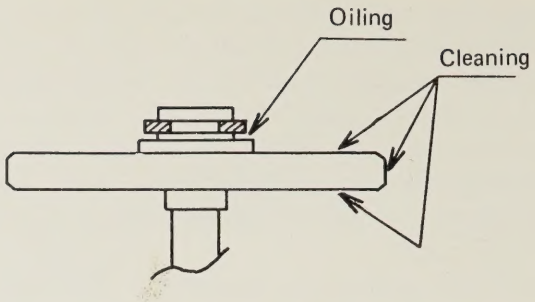


Fig. 23

2) Cam roller

Apply grease to the sliding surface of the cam roller ever about 1,000 hours of use.

BEAT CAUSED IN RECORDING THE AM BROADCASTING

The models 4RD-1405, 1405U and 1405F are so designed to prevent beats being generated in recording AM broadcasts. However, beats may sometimes be generated in some cases if the field strength is small or because of the relative position of the deck and the stereo set. In such a case change the position of the tape deck.

PRINTED CIRCUIT BOARD PARTS

Rec/play amp circuit board

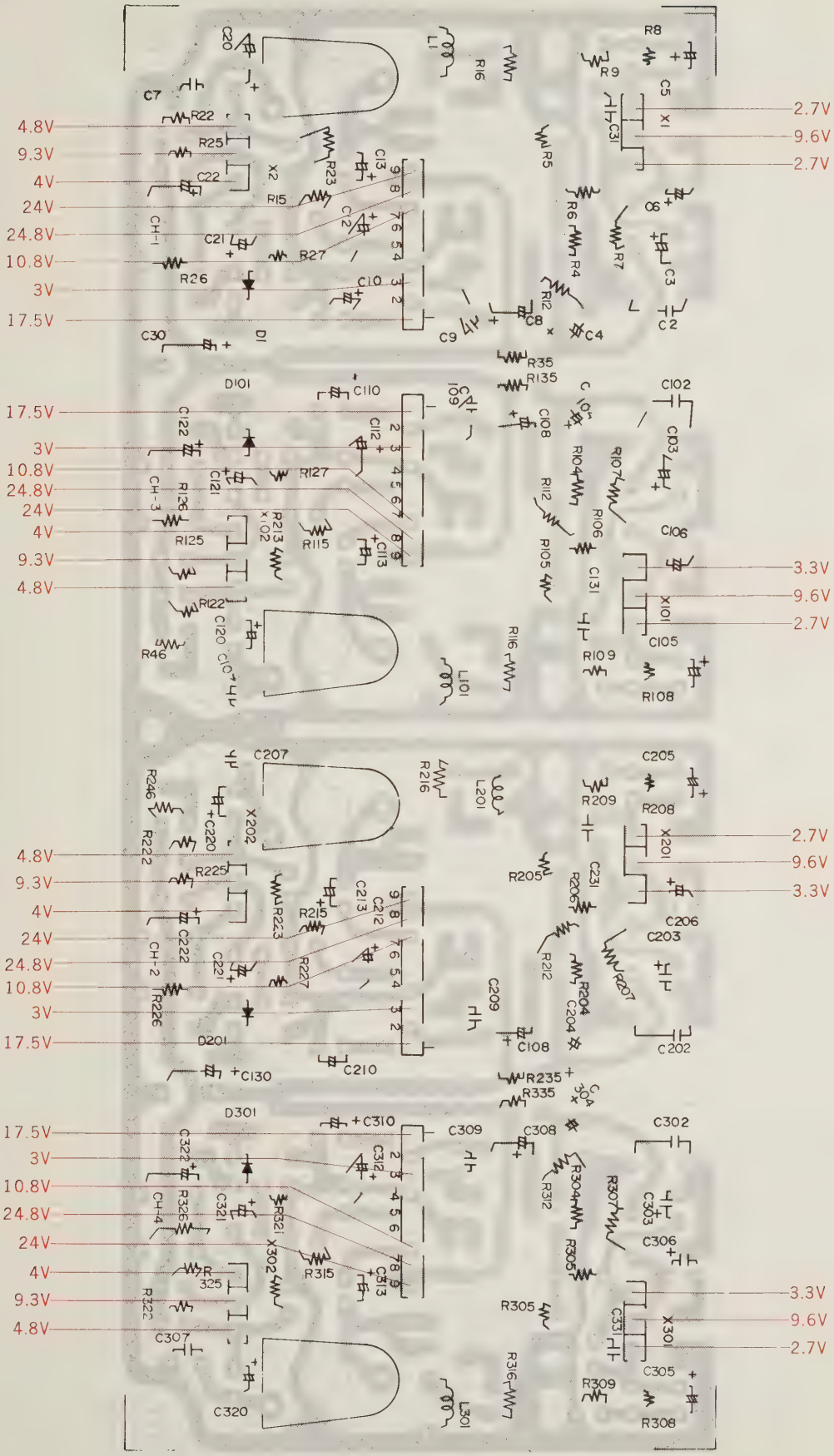


Fig. 24

Equalizer circuit board

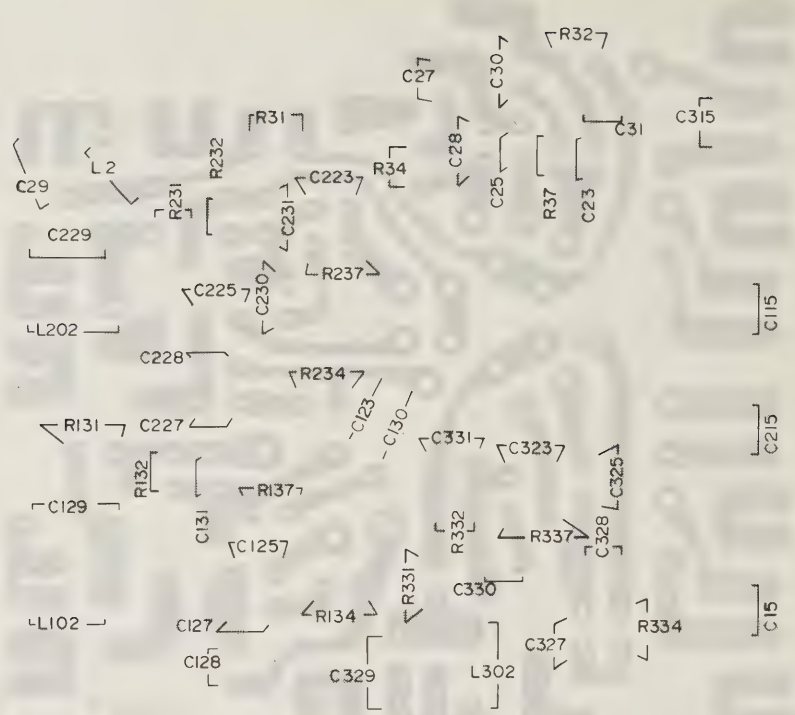


Fig. 25

Rec/play selector circuit board

Fig. 26

Oscilator (OSC) circuit board

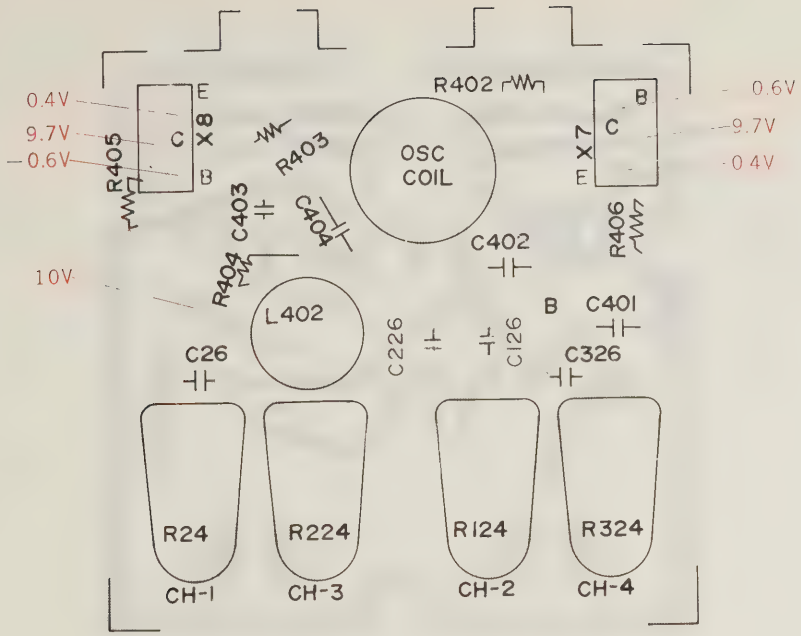


Fig. 27

Level control circuit board

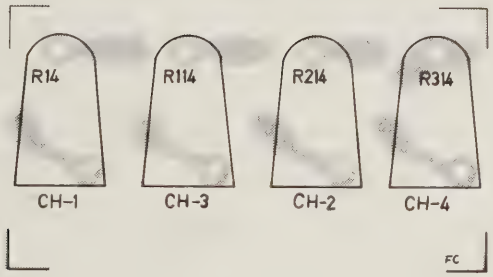


Fig. 28

Power circuit board

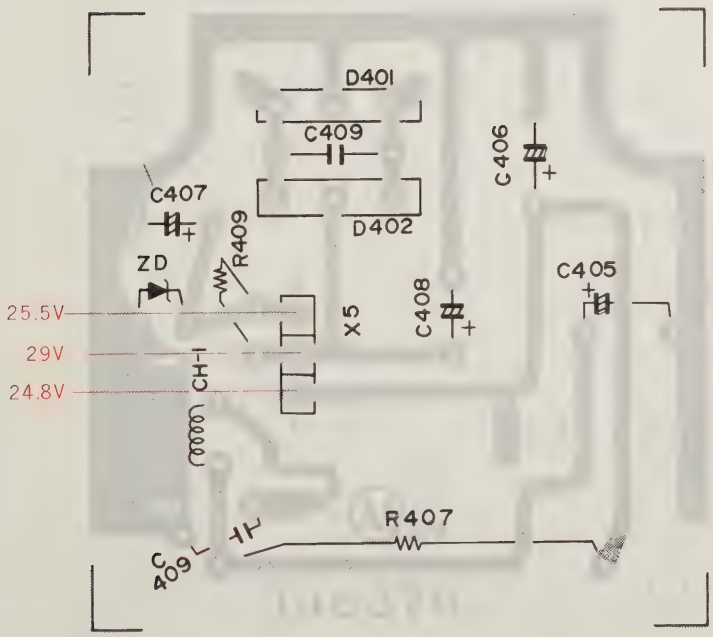


Fig. 29

Rec/play circuit board

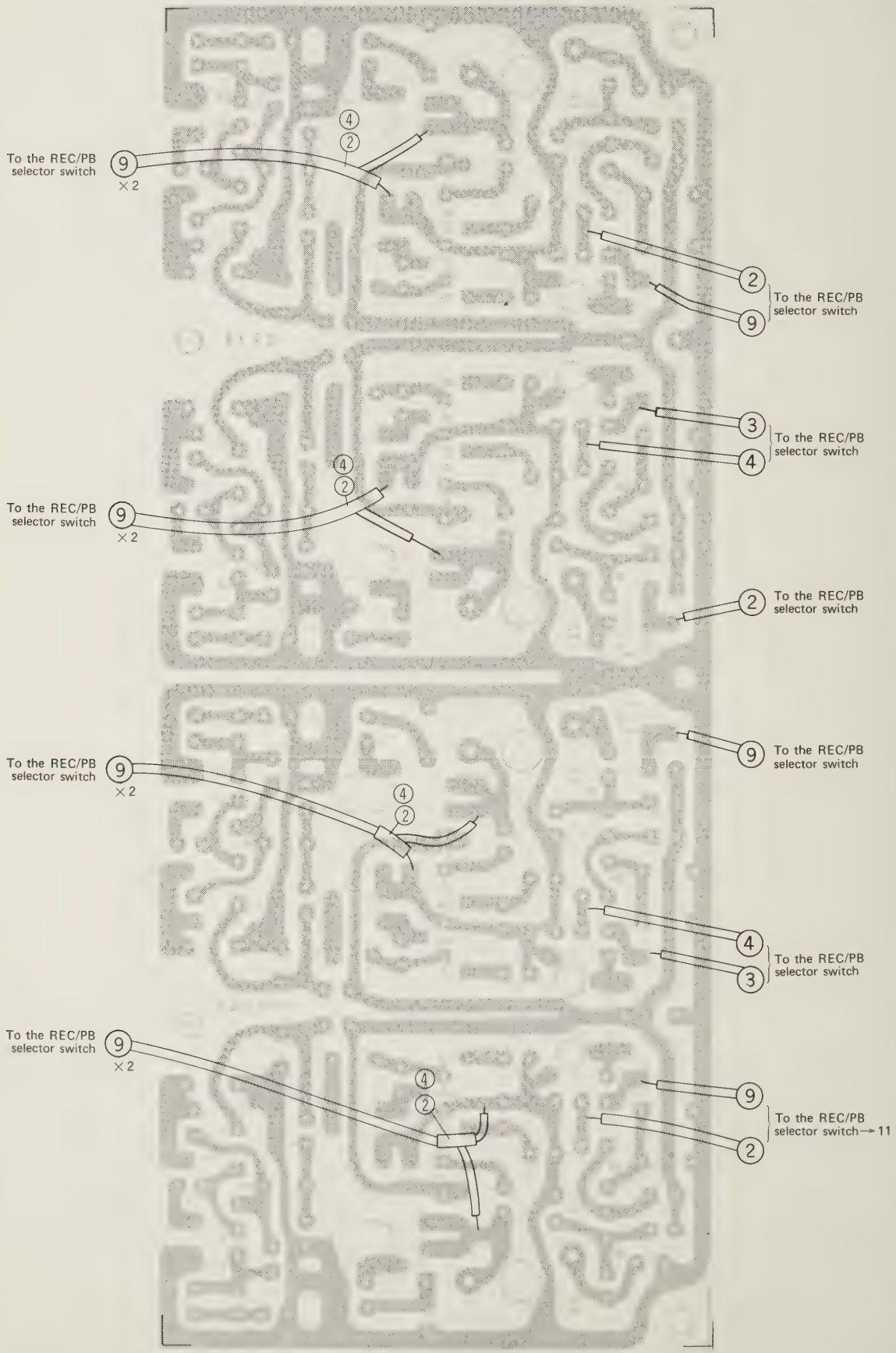
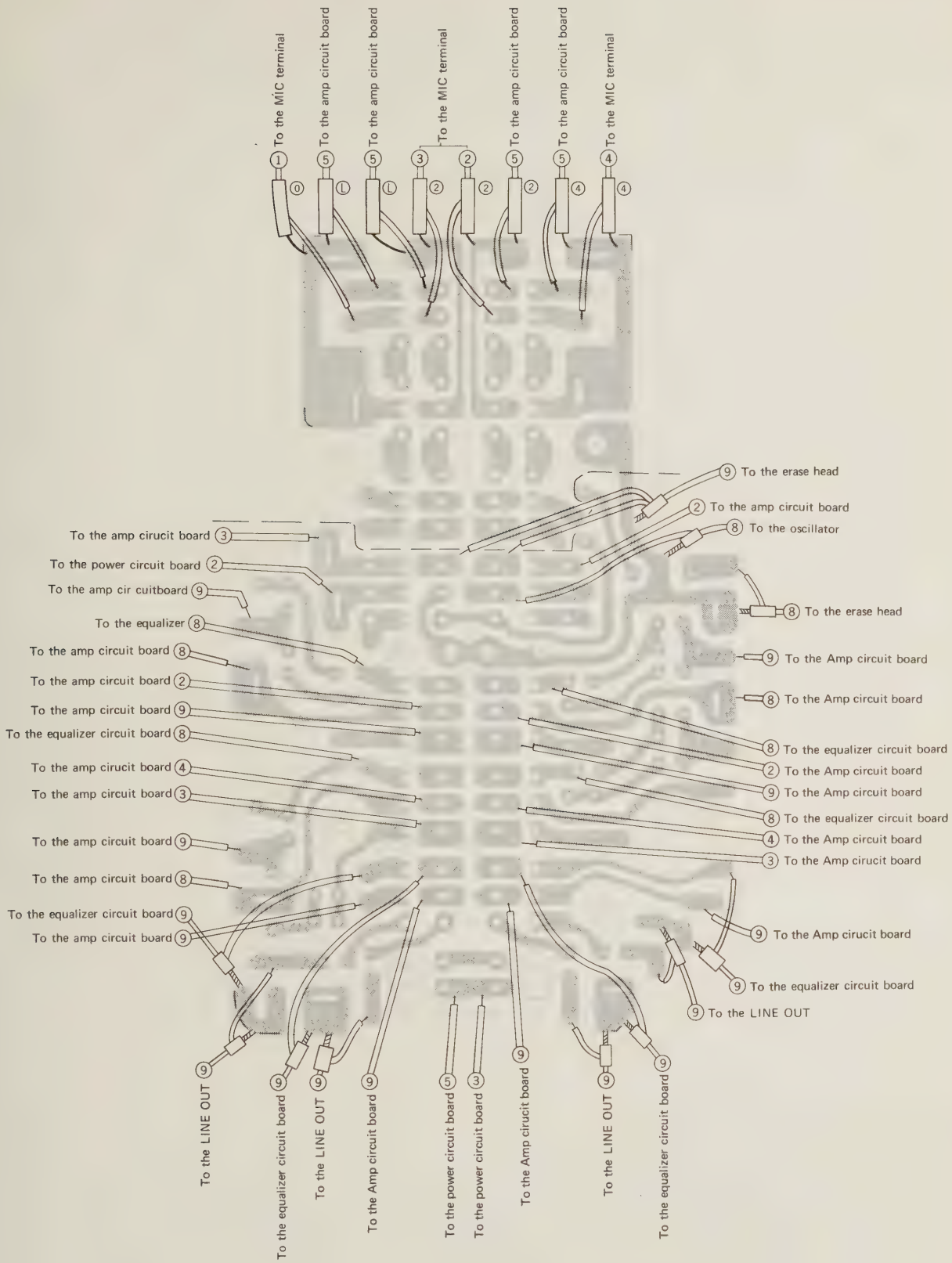


Fig. 30


To the MIC terminal
To the amp circuit board
To the amp circuit board
To the MIC terminal
To the amp circuit board
To the amp circuit board
To the MIC terminal
To the erase head
To the amp circuit board
To the oscillator
To the amp cirucit board
To the power circuit board
To the amp cir cuitboard
To the equalizer
To the amp circuit board
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To the LINE OUT
To the LINE OUT
To the equalizer circuit board
To the LINE OUT
To the Amp circuit board
To the power circuit board
To the power circuit board
To the Amp cirucit board
To the LINE OUT
To the equalizer circuit board

Fig. 31

Level control circuit board

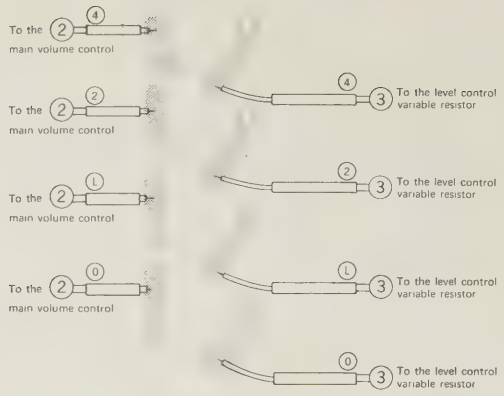


Fig. 32

Power circuit board

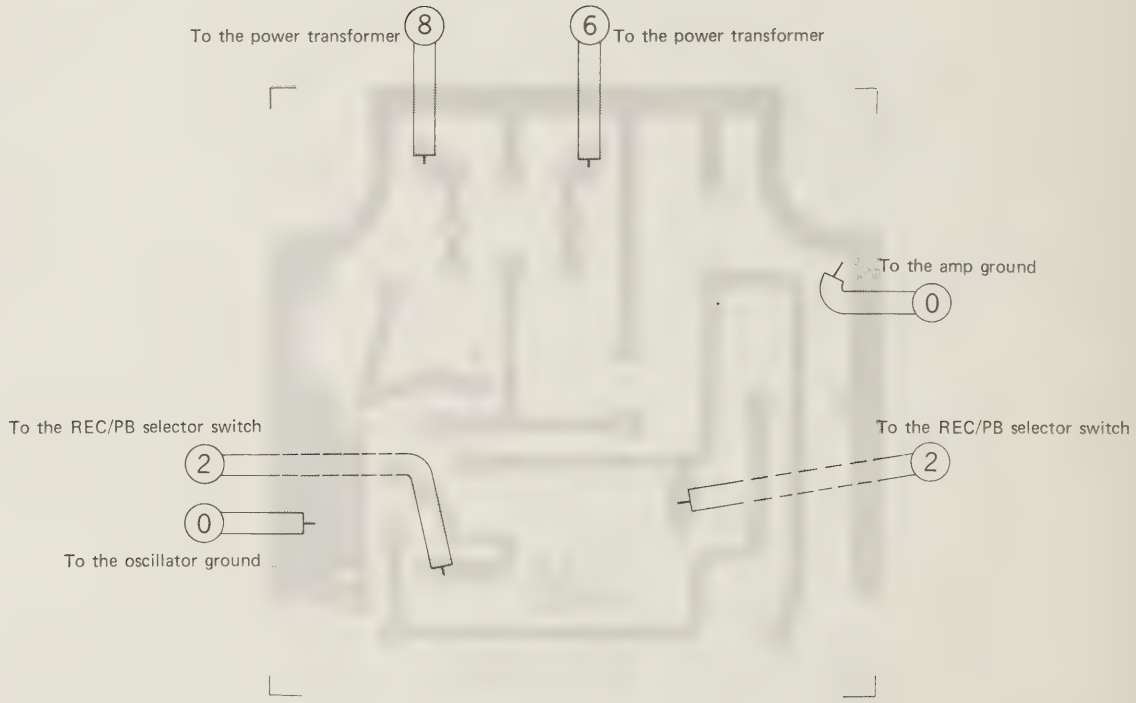


Fig. 33

Pilot lamp relay circuit board

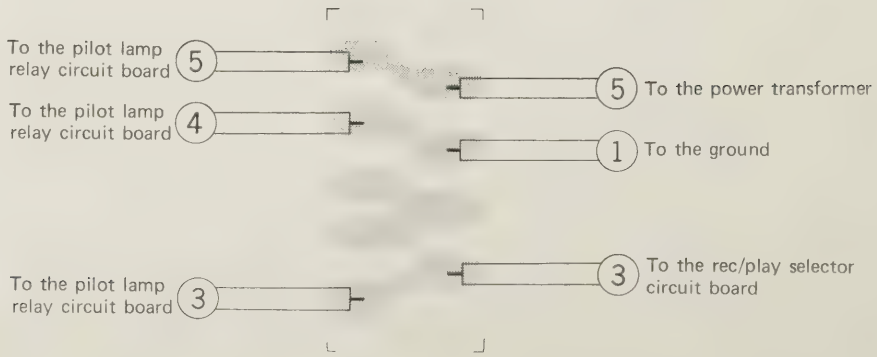


Fig. 34

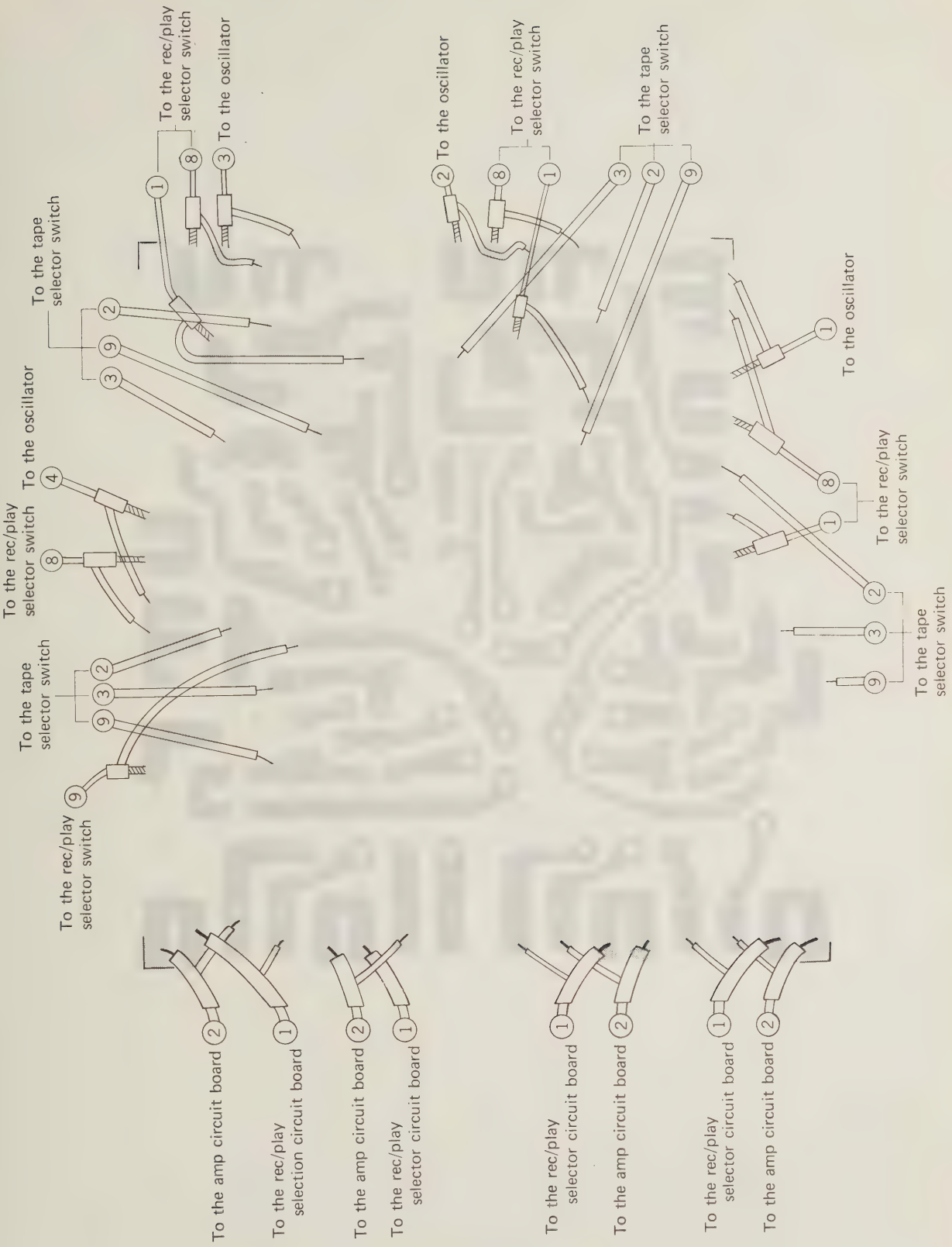

To the amp circuit board
To the rec/play selection circuit board
To the rec/play selector switch
To the tape selector switch
To the rec/play selector switch
To the oscillator
To the amp circuit board
To the rec/play selector circuit board
To the rec/play selector switch
To the tape selector switch
To the rec/play selector switch
To the oscillator
To the rec/play selector circuit board
To the amp circuit board
To the rec/play selector switch
To the tape selector switch
To the rec/play selector switch
To the oscillator
To the rec/play selector circuit board
To the amp circuit board
To the rec/play selector switch
To the tape selector switch
To the rec/play selector switch
To the oscillator

Fig. 35

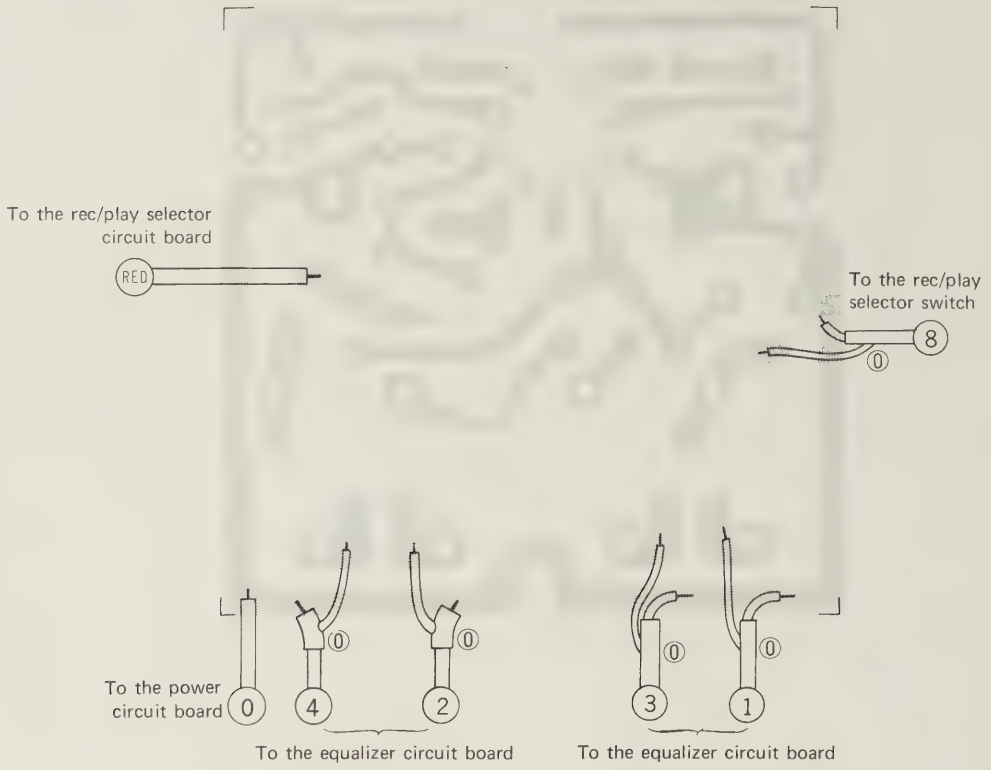


Fig. 36

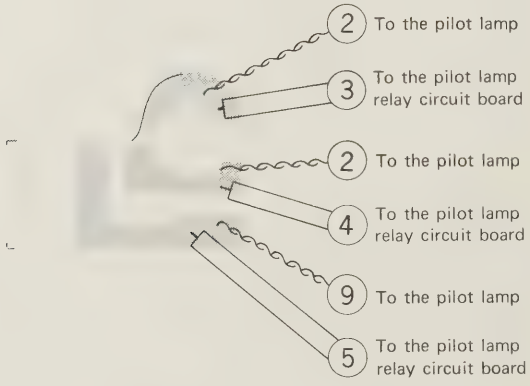


Fig. 37

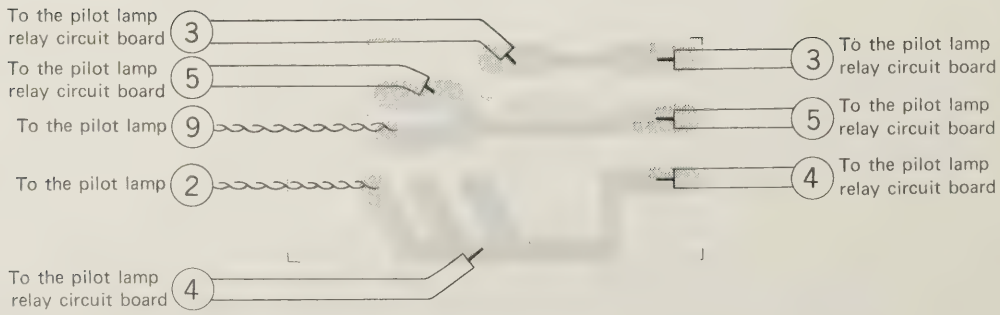


Fig. 38

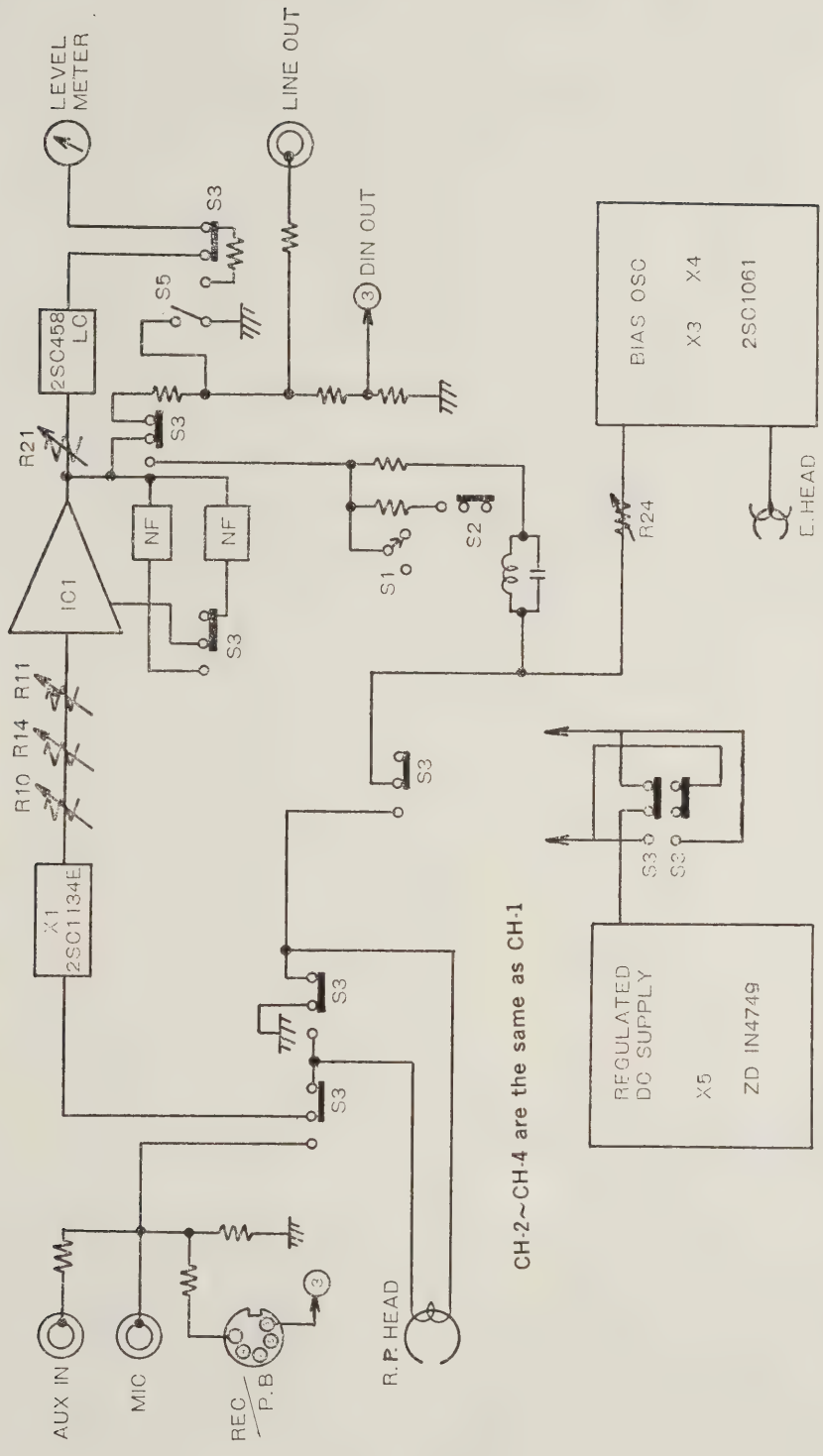

LEVEL METER
LINE OUT
DIN OUT
2SC458 LC
S5
S3
R21
NF
NF
IC1
S1
S2
R10 R14 R11
X1 2SC1134E
BIAS OSC
X3 X4
2SC1061
R24
E.HEAD
REGULATED DC SUPPLY
X5
ZD IN4749
AUX IN
MIC
REC/P.B
R.P.HEAD
CH-2~CH-4 are the same as CH-1
R10 All channel volume control variable resistor
R11 Channel volume control variable resistor
R14 Playback level control variable resistor
R21 Meter adjust variable resistor
R24 Bias adjust variable resistor
S1 Tape speed selector equalizer
S2 Tape selector switch
S3 Rec/play selector switch
S4 Muting switch

Fig. 39

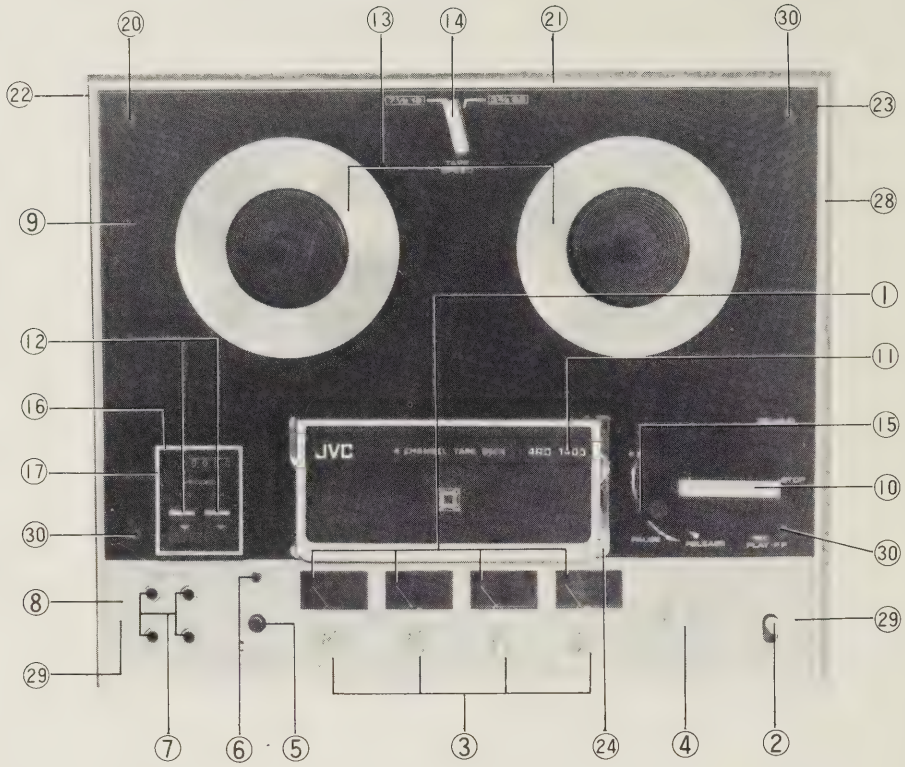


Fig. 40

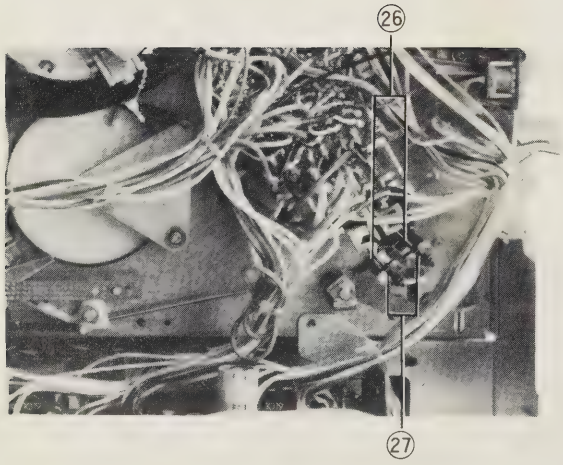


Fig. 41

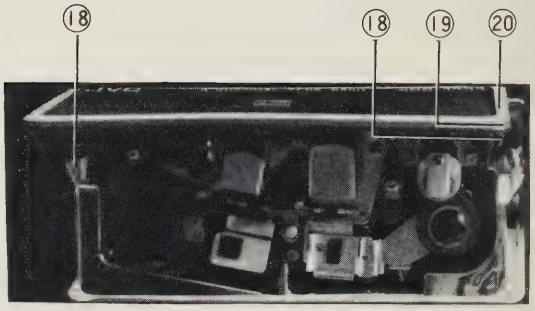


Fig. 42

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	T31208-001	VU meter		4
2	QSL1135-006	Power switch		1
3	E46381-002	Volume control knob	For sub-volume control	4
4	E46380-003	Volume control knob	For main volume control	1
5	T46400-001	Knob	For tape selector switch	1
6	T42244-00A	Indicator		1
7	T44585-001	MIC spacer		4
8	T22787-003	Control panel		1
9	T22788-002	Top Panel		1
10	T42963-00C	Control knob ass'y		1
11	T31212-00C~E	Head cover plate ass'y	00C(1405U),00D(1405), 00E(1405F)	1
12	T42242-002	Recording button		2
13	T44343-001	Spin plate		2
14	T44775-00A	Speed selector knob ass'y		1
15	T43733-001	Knob	For fast forward	1
16	T43479-00C	Recording button escutcheon plate ass'y		1
17	T43395-001	Escutcheon cover plate		1
18	T43734-001	Tape stud		2
19	T30563-001	Head cover (A)		1
20	T30752-002	Head cover (B)		1
21	T31194-002	Fitting (A)		1
22	T31193-003	Fitting (B)		1
23	T31193-004	Fitting (C)		1
24	T30747-001	Loading base		1
26	T43465-001	Recording rod		2
27	T30301-005	Spring		2
28	T11433-00C	Cabinet ass'y		6
29	SDBP3006RS	Screw		4
30	SDBP3008RS	Screw		2

(1) RECORDING/PLAYBACK CIRCUIT BOARD

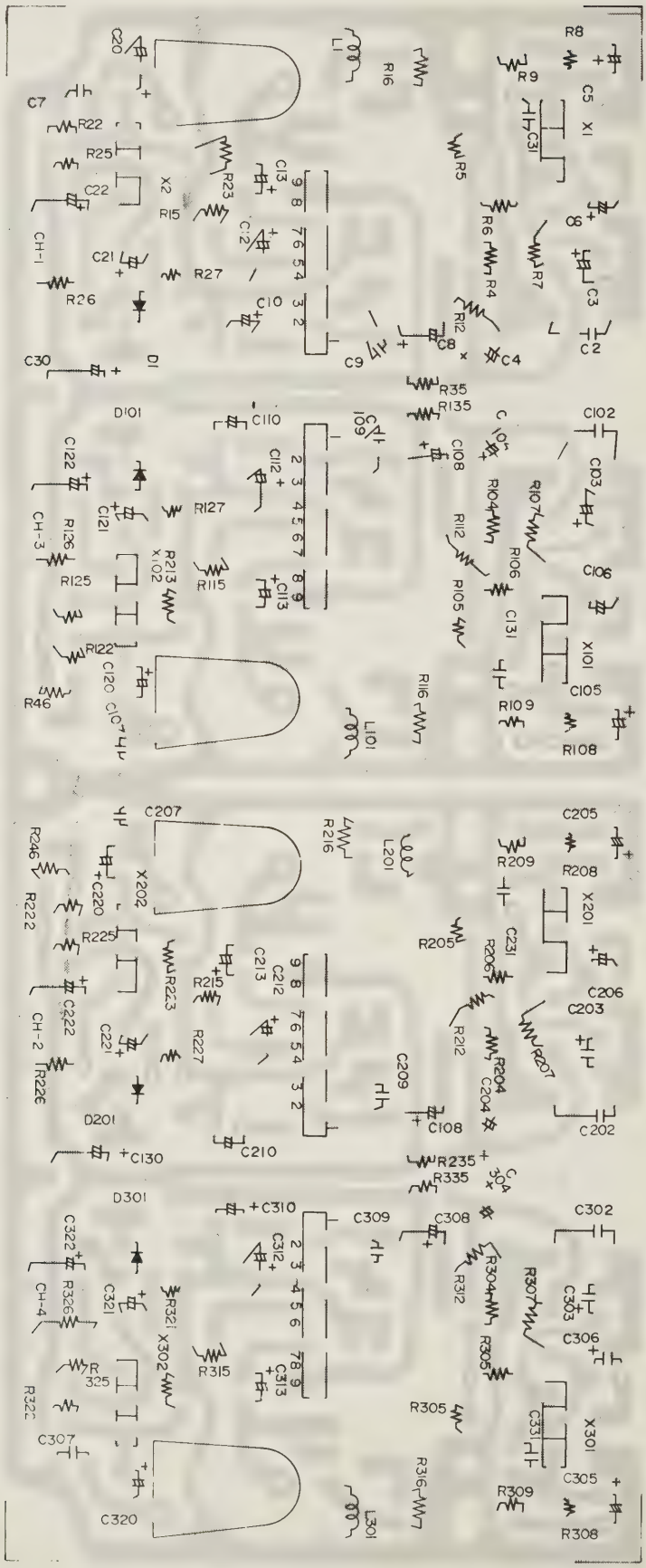


Fig. 43

RECORDING/PLAYBACK CIRCUIT BOARD PARTS

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	*T22786-001	Printed circuit board		1
R 16,116,216,316	Q04802-47	Carbon resistor		4
R 9,109,209,309	Q04802-330	"		4
R 26,126,226,326	" -560	"		4
R 25,125,225,325 27,127,227,327	" -2.2K	"		8
R 15,115,215,315	Q04802-2.7K	"		4
R 23,123,323,423	" -8.2K	"		4
R 8,108,208,308	" -10K	"		4
R 35,135,235,335	" -6.8K	"		4
R 22,122,222,322 12,112,212,312	" -33K	"		8
R 7,107,207,307	Q04802-39K	"		4
R 5,105,205,305	" -56K	"		4
R 6,106,206,306	" -100K	"		4
R 4,104,204,304	" -270K	"		4
R 46,146	QRC141K-330	Composition Resistor		2
C 22,122,222,322	Q03104-33	Electrolytic capacitor		4
C 5,105,205,305	" -47	"		4
C 12,112,212,312	" -100	"		4
C 21,121,221,321	Q03110-4.7	"		4
C 3,103,203,303 106,206,306 19,119,219,309 13,113,213,313 20,120,220,320	" -10	"		20
C 10,110,210,310 C 4,114,214,314	Q03110-33	"		8
C 30,130	Q03138-470	"		2
C 9,109,209,309	Q04305-47	Ceramic capacitor		4
C 2,102,202,302 31,131,231,331	" -100	"		8
R 21,121,221,321	Q04850-004	Semi-fixed variable resistor		4
D 1,101,201,301	1N34A	Diode		4
IC 1,101,201,301	T31335-001	IC		4
X 1,101,201,301	2SC1344E	Silicon transistor		4
X 2,102,202,302	2SC458LC	"		4
L 1,101,201,301	T40442-008	Inductor		4
C 7,107,207,307	Q03244-153	Mylar capacitor		4

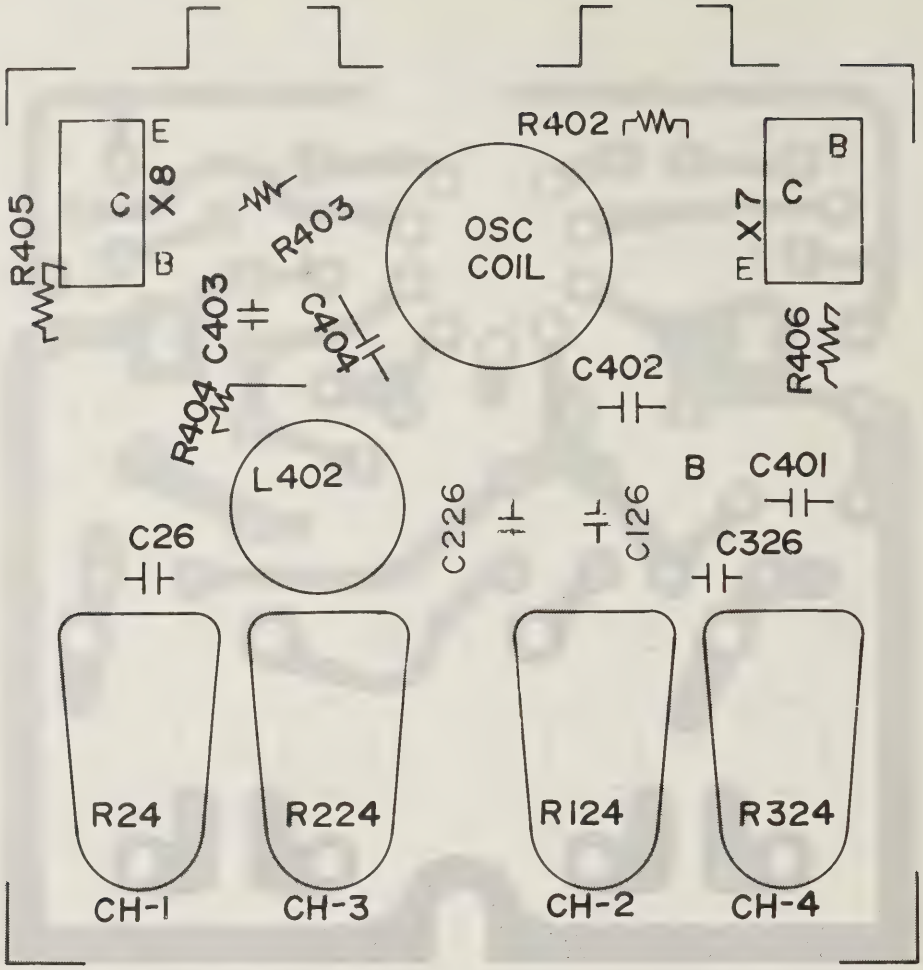


Fig. 44

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	T44446-001	Printed circuit board		1
R 405,406	Q04802-4.7	Carbon resistor		2
R 402,403	" -68	"		2
R 404	" -3.3K	"		1
C 26,126,226,326	Q03286-361	FM capacitor		4
C 503	Q46962-01	Ceramic capacitor		1
C 410	" -04	"		1
C 402	Q03205-152	OFT capacitor		1
C 401	" -102	"		1
L 402	T30606-002	Inductor 1mH		1
	T30554-001	OSC coil		1
R 24,122,224,324	Q04849-007	Semi-fixed variable resistor		4
X 3,4	2SC1061B	Silicon transistor		2
	T44445-001	Heat sink		1

LEVEL CONTROL CIRCUIT BOARD

Fig. 45

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	*T46379-001	Printed circuit board		1
R 14,114,214,314	Q04849-007	Semi-fixed variable resistor		4

EQUALIZER CIRCUIT BOARD

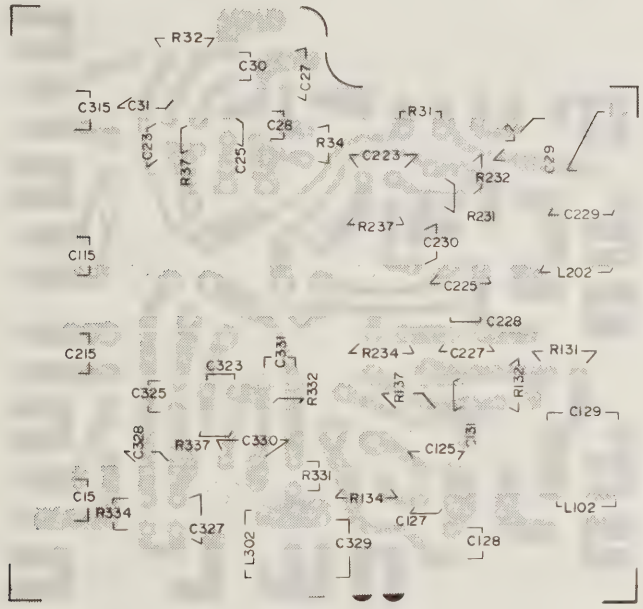


Fig. 46

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	*T31619-001	Printed circuit board		1
	T30711-001	Rotary switch		1
R 34,134,234,334	Q04802-68K	Carbon resistor		4
R 31,131,231,331 37,137,237,337	" -33K	"		8
R 32,132,232,332	" -100K	"		4
C 27,127,227,327	Q03244-102	Mylar capacitor		4
C 28,128,228,328 30,13,230,330	" -152	"		8
C 15,115,215,315 16,116,216,316	" -333	"		8
C 31,131,231,331	Q04305-330	Seramic capacitor		4
C 23,123,223,323 25,125,225,325	Q04051-681	"		8
C 29,129,229,329	Q03286-431	FM capacitor		4
L 2,102,202,302	T40442-001	Inductor	1mH	4

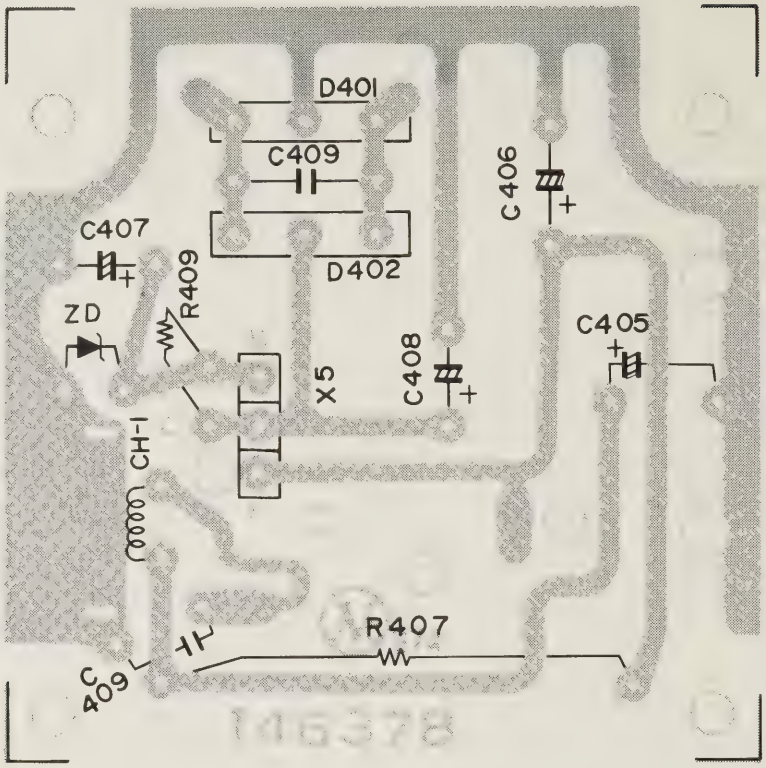


Fig. 47

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	*T46378-001	Printed circuit board		1
D401	T42692-001	Diode		1
D402	T42692-001R	〃		1
R409	Q04802-220	Carbon resistor		1
C405	Q03110-470	Electrolytic capacitor		1
C409,408	Q03138-470	〃		2
C406	QEZ0004-108	〃		1
C409	Q42309-02	Ceramic capacitor	Q03138-100	1
X5	2SC1162WTB	Silicon transistor		1
ZD	*1N4749	Zener diode		1
R407	Q04782-68T	Wire-wound resistor		1
CH-1	T42489-001	Choke coil		1
C404	Q46962-04	Ceramic capacitor		1
	*T46033-001	Heat sink		1

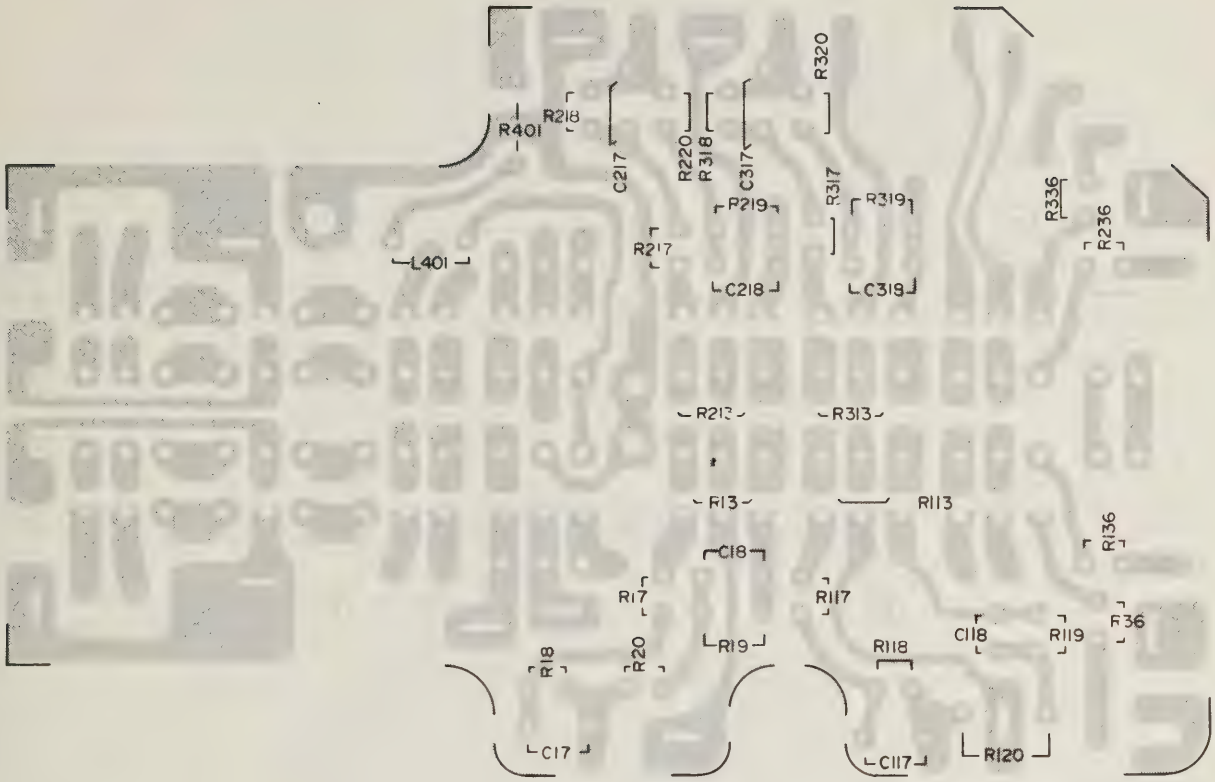


Fig. 48

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	*T31620-001	Printed circuit board		1
	*T31271-001	Slide switch		2
R 17,117,217,317	Q04802-6.8K	Carbon resistor		4
R 20,120,220,320	" -68K	"		4
R 19,119,219,319	" -100K	"		4
R18,118,218,398	Q04802-470K	"		4
R13,113,213,313	Q04800-1.8K	"		4
R408	Q04802-10	"		4
R36,336	" -220	"		2
R136,236	Q04800-220	Carbon resistor		2
C17,117,217,317	Q03244-682	Mylar capacitor		4
C 18,118,218,318	" -104	"		4
L 401	T30606-004	Inductor		1

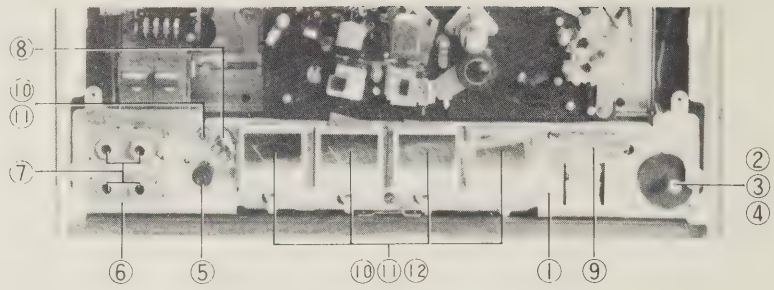


Fig. 49

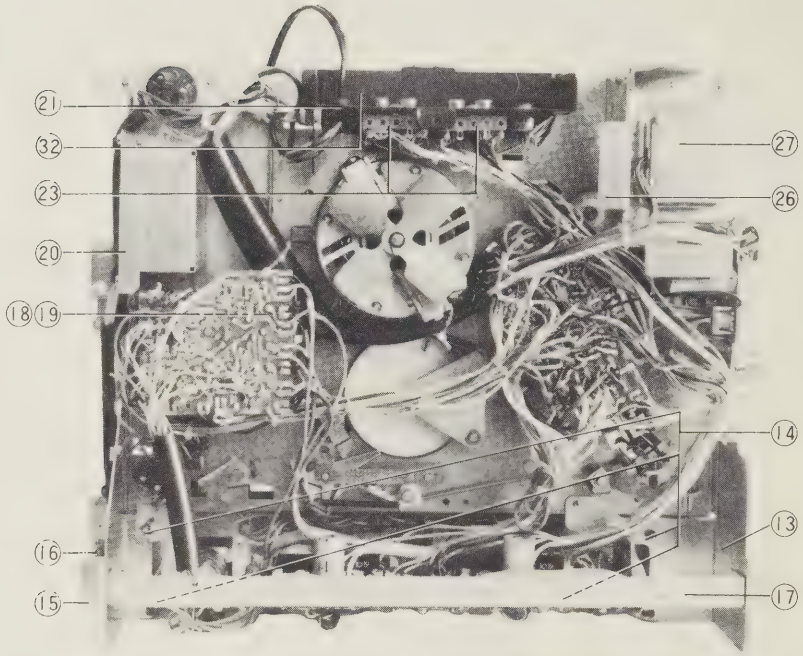


Fig. 50

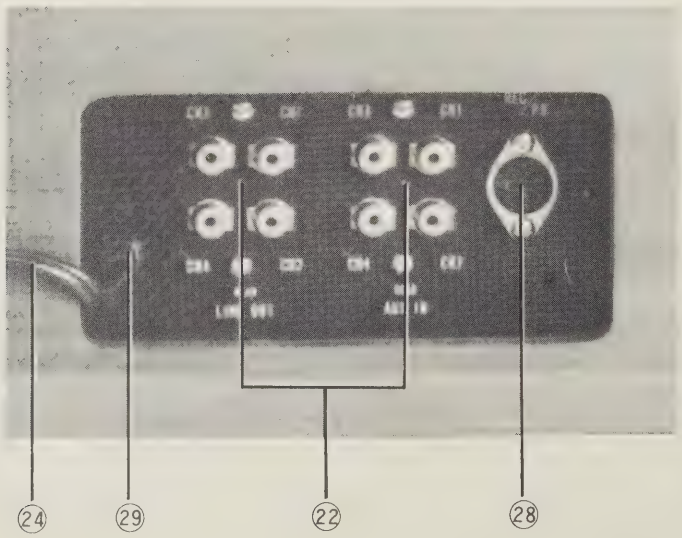


Fig. 51

DISASSEMBLY DIAGRAM OF CASSETTE MECHANISM

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	*T22785-00A	Control deck ass'y		1
2	*QSL1135-006	Lever switch	(1405U)	1
2	QSY2220-006	〃	(1405F)	1
2	QSU1120-003	〃	(4RD-1405)	1
3	QFH72EM-473	MM capacitor	(4RD-1405,1405U)	1
4	T47047-001	Cap	(4RD-1405,1405U)	2
R10,110,210,310	*QVH2A3A-054	Variable resistor	50kΩ (A)	1
R 11,111,211,311	*T46839-001	〃	50kΩ (B)	4
5	*T46630-001	Push switch		1
6	*T46377-001	Board	For mic jack	1
7	Q03961-001	Jack ass'y	For mic	4
R3,103,203,303	Q04800-2.7K	Carbon resistor		4
C 1,101,201,301	Q04305-100	Ceramic capacitor		4
8	*T46631-001	Board	For relaying pilot lamps	1
9	*T46383-001	〃	〃	1
10	T46821-001	Pilot lamp		5
11	53492-001	Rubber bushing		5
12	T45080-001	Meter cushion		8
13	*T31192-001	Deck holder		1
14	T44615-001	Stud		4
15	*T31191-001	Deck holder		1
16	T46382-001	Board	For relaying pilot lamps	1
17	*T31197-001	Board holder		1
18	T44599-001	Switch lever		1
19	T30302-011	Collar		1
20	T30908-00A	Bracket ass'y		1
21	*T30740-00D	Jack plate ass'y	(1405F, 4RD-1405)	1
21	T30740-00E	〃	(1405U)	1
22	T30233-001	Pin jack ass'y		2
23	Q03007-53	Lug strip ass'y		4
R30,130,230,330	Q04802-4.7K	Carbon resistor		4
R28,128	〃 -5.6K	〃		2
R2,102	〃 -8.2K	〃		2
R29,129	〃 -10K	〃		2
R1,101,201,301	〃 -390K	〃		4
24	Q03056-014	Power cord	(4RD-1405)	1
24	Q03054-00P	Power cord with plug	(1405U)	
24	T42918-001	〃	(1405F)	
25	Q30219-001	Fuse board ass'y	(4RD-1405, 1405U)	1
25	QMG1321-001	〃	(1405F)	3
26	*T31198-00A	Transformer bracket ass'y	(4RD-1405, 1405U)	1
26	T31198-00B	〃	(1405F)	1
27	*T31333-001	Power transformer	(4RD-1405, 1405U)	1
27	T31363-001	〃	(1405F)	
28	Q03967-001	DIN socket ass'y		1
29	T41336-001	Cord stopper		1
32	Q30087-001	Socket ass'y	(1405U)	1

PARTS LIST OF CASSETTE MECHANISM (Refer to Fig. 52)

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	*T30510-00D	Mounting plate ass'y		1
2	*T45869-00A	Shifter arm ass'y		1
3	*T45862-00A	Shifter bar ass'y		1
4	T43433-001	Fast forward lever		1
5	R43434-001	Wire		1
6	T43423-001	Fast forward/pause lever		1
7	T45868-001	Spring plate		1
8	T43424-001	"		1
9	T43431-001	Pause lever		1
10	T43434-001	Wire		1
11	T43444-001	Elevation lever		1
12	T42832-00A	Pinch roller ass'y		1
13	T42830-001	Guide rod		1
14	T30503-00A	Capstan metal		1
15	*T400182-00A	Rec/play head ass'y		1
16	T43447-001	Shilding plate		1
17	T45158-003	Pad		1
18	T40063-00A	Erase head		1
19	*T46405-001	Tape cleaner		1
20	PSE2014	Spring pin		1
21	*T46462-002	Felt		1
22	*T46406-001	Tape cleaner arm		1
23	T43500-00A	Pinch roller arm ass'y		1
24	T43451-001	Spacer		1
25	T45685-001	Tape shifter		1
26	*T46461-00B	Pad arm ass'y		1
27	*T45158-006	Pad		1
28	T44208-001	Instant reset lever		1
29	T43443-001	Pinch roller shaft		1
30	T44286-001	Fast forward lever		1
31	T43532	Stud		1
32	T43535-001	Tire		1
33	T43393-00A	Capstan ass'y		1
34	T43534-001	Capstan belt		1
35	*T46407-001	Spring		1
36	T7159-001	"		1
37	T30300-043	"		1
38	*T30300-080	"		1
39	T30300-044	"		1
40	T30301-019	"		1
41	T30300-079	"		1
42	T30300-078	"		1
43	T42834-001	Pinch roller cap		1
44	T30302-019	Collar		1
45	Q03093-102	Washer		1
46	WNS4000N	"		1
47	WNS4000N	"		1
48	WNS4000N	"		1
49	Q03091-102	"		1
50	Q03091-138	"		1
51	WSB2600N	"		1
52	WSB2600N	"		1
53	WNS3000N	"		1
54	Q03091-105	"		1
55	T30302-033	Collar		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
56	T30302-012	Collar		1
57	Q03093-508	Washer		1
58	Q03093-301	"		1
59	Q03091-138	"		1
60	T30302-025	Collar		1
61	WLS3000	Lock washer		2
62	WLS3000	"		1
63	WLS3000	"		1
64	WLS2600	"		1
65	WLS3000	"		1
66	WLS3000	"		1
67	WLS3000	"		1
68	WLS2000	"		1
69	WLS2600	"		1
70	WLS3000	"		1
71	WLS3000	"		1
72	WLS3000	"		1
73	WLS3000	"		1
74	WLS3000	"		1
75	REE5000	E-washer		1
76	REE5000	"		1
77	REE3000	"		1
78	REE3000	"		1
79	REE4000	"		1
80	REE4000	"		1
81	REE5000	"		1
82	REE3000	"		1
83	REE3000	"		1
84	SDBP3008	Screw		2
85	SDBP3008RS	"		1
86	"	"		1
87	"	"		1
88	SDSP2606R	"		1
89	SPSP3008ZS	"		1
90	SDBP3030RS	"		1
91	SDBP2606R	"		1
92	SDBP3006RS	"		1
93	SSSP2004N	"		1
94	SDBP2614R	"		1
95	SDBP2606R	"		1
96	SDBP3006RS	"		1
97	"	"		1
98	SDBP2606R	"		2
99	SDBP3030RS	"		1
100	SPSP3016ZS	"		1
101	SDBP3006RS	"		1
102	LPSP3005ZS	"		1
103	LPSP3008ZS	"		1
104	LPSP3006ZS	"		1
105	LPSP3006ZS	"		1
106	T43536-001	Spring plate		1
107	T44325-001	Protector		1
108	T42805-001	Guide plate		1
109	T42805-001	"		1
110	T42805-001	"		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
111	T42805-001	Guide plate		1
112	T43452-001	Tape guide spacer		1
113	T42804-001	Tape guide		1
114	T30302-009	Collar		1
115	T43452-001	Tape guide spacer		1
116	T42804-001	Tape guide		1
117	NTB2000	Nut		1
118	T11360-00D	Chassis base		1
119	T43459-001	Recording bracket		1
120	T43461-001	Recording knob lever	(Left)	1
121	T43460-001	〃	(Right)	1
122	T44566-001	Recording arm (L)		1
123	T44565-001	〃 (R)		1
124	T43498-00A	Stop slider ass'y		1
125	T43981-00A	Plate ass'y		1
126	T43983-00A	Stop pulley ass'y		1
127	T43977-001	Belt		1
128	T44771-00A	MP capacitor		1
129	*m572-00B	Motor		1
130	T45430-1~3 T45430-4~6	Motor pulley	(50Hz) (60Hz)	1
131	T43532-001	Stud		1
132	T43473-001	Microswitch bracket		1
133	T42819-001	Insulator		1
134	T3428-001	Microswitch		1
135	QFH72EM-473	M.M. capacitor		1
136	T43471-00A	Actuator ass'y		1
137	T43533-001	Balance plate		1
138	*T46451-001	Mode lock lever		1
139	T44563-00A	Connector ass'y		1
140	T46742-00A	Connector lever ass'y		1
141	T43403-001	Holder bracket		1
142	T43487-00A	Drive cam ass'y		1
143	T43486-00A	Control cam ass'y		1
144	T43425-00A	Index arm		1
145	T43426-001	Index roller		1
146	*T43489-00B	Bracket ass'y		1
147	T42754-001	Fast forward arm		1
148	T43436-001	Fast forward wire		1
149	T45431-00A	Idler lever ass'y		1
150	T43495-00A	Brake arm ass'y		1
151	T44534-001	Cushion		1
152	T5090-002	Brake pad		1
153	*T44733-001	Tension brake arm		1
154	T43435-001	Lever		1
155	*T4044-00A	Idler ass'y		1
156	T45270-001	Bearing		1
157	T45268-001	Spring plate		1
158	T45267-00A	Take-up disc		1
159	T43401-001	Felt		1
160	T43398-001	Free cushion disc		1
161	T43399-001	Felt		1
162	T30882-00A	Reel disc ass'y		1
163	T41529-001	Cement sheet		1
164	T41106-002	Reel disc decoration		1
165	T44562-001	Stopper bracket		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
166	T44608-001	Change shaft		1
167	T43493-00A	Rewind lever ass'y		1
168	T43496-00A	Brake arm ass'y		1
169	T44560-00A	Change cam ass'y		1
170	T43529-001	Rod		1
171	T45368-001	Lever		1
172	T43497-00A	Pause brake ass'y		1
173	T44609-001	Brake lever		1
174	T5090-002	Brake pad		1
175	T43415-00A	Counter pulley ass'y		1
176	*T46824-00A	Supply disc holder		1
177	T45270-001	Reel disc bearing		1
178	T6083-001	Rewind belt		1
179	T43402-001	Friction disc		1
180	T43399-001	Felt		1
181	T30502-00A	Reel disc ass'y		1
182	T41529-001	Cement sheet		1
183	T41106-002	Reel disc decoration		1
184	T43492-00A	Rewind arm		1
185	T5519-001	Belt pulley		1
186	T43494-00A	Shifter lever ass'y		1
187	T43518-001	Change bracket		1
188	T43520-00A	Change lever ass'y		1
189	T43521-001	Change rod		1
190	*T44604-00A	Lock cam ass'y		1
191	T30569-001	Counter		1
192	T40291-001	Counter belt		1
193	T43462-001	Guide rod		1
194	T30300-93	Spring		1
195	T30300-038	〃		1
196	T30300-021	〃		1
197	T30300-102	〃		1
198	T30301-057	〃		1
199	*T30300-103	〃		1
200	T30301-057	〃		1
201	T30300-033	〃		1
202	T30300-003	〃		1
203	T30300-035	〃		1
204	T30300-036	〃		1
205	T30300-006	〃		1
206	T30300-047	〃		1
207	T30300-047	〃		1
208	T30300-057	〃		1
209	T46814-001	〃		1
210	T43432-001	Pause wire		1
211	T5903-001	Felt		1
212	T5313-001	Oil container		1
213	Q03093-516	Washer		1
214	Q0393-605	〃		1
215	Q03091-105	〃		1
216	Q03093-433	〃		1
217	Q03091-135	〃		1
218	Q03093-509	〃		2
219	Q03093-509	〃		1
220	Q03091-138	〃		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
221	Q03093-509	Washer		1
222	Q03093-510	〃		1
223	Q03091-138	〃		1
224	Q03091-103	〃		2
225	WNS3000N	〃		1
226	Q03093-505	〃		1
227	Q03093-505	〃		1
228	WNS3000N	〃		1
229	Q03093-508	〃		1
230	Q03093-507	〃		1
231	Q03091-146	〃		1
232	Q03093-502	〃		1
233	〃	〃		1
234	Q03093-405	〃		1
235	Q03093-505	〃		1
236	Q03093-605	〃		1
237	WNS3000	〃		1
238	Q03091-105	〃		1
239	WNS6000N	〃		1
240	Q03093-502	〃		1
241	Q03091-112	〃		1
242	Q03093-433	〃		1
243	Q03091-133	〃		1
244	WNS3000N	〃		1
245	REE4000	E-washer		1
246	REE5000	〃		1
247	REE5000	〃		1
248	REE4000	〃		1
249	REE4000	〃		1
250	REE4000	〃		1
251	REE4000	〃		1
252	REE4000	〃		1
253	REE4000	〃		1
254	REE4000	〃		1
255	REE7000	〃		1
256	REE7000	〃		1
257	REE3000	〃		1
258	REE4000	〃		1
259	REE4000	〃		1
260	REE4000	〃		1
261	REE4000	〃		1
262	REE4000	〃		1
263	REE4000	〃		1
264	REE4000	〃		1
265	REE4000	〃		1
266	WLS3000	Lock washer		1
267	REE3000	E-washer		1
268	REE3000	〃		1
269	REE4000	〃		1
270	WNS6000N	Washer		1
271	NTB2000	Nut		2
272	NTB3000S	〃		1
273	T30302-005	Collar		1
274	REE4000	E-washer		1
275	T30302-025	Collar		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
276	T5090-002	Brake pad		1
277	T30302-005	Collar		1
278	LPSP3006ZS	Screw		2
279	LPSP3005ZS	〃		2
280	LPSP3006ZS	〃		1
281	LPSP3006ZS	〃		1
282	SPSP2604Z	〃		1
283	LPSP3006ZS	〃		1
284	LPSP3006ZS	〃		1
285	SPSP3025ZS	〃		1
286	SPSP4008ZS	〃		1
287	LPSP3006ZS	〃		1
288	LPSP3006ZS	〃		2
289	LPSP3006ZS	〃		1
290	LPSP3006ZS	〃		2
291	SPSP2006Z	〃		2
292	SPSP3014ZS	〃		2
293	SPSP2008Z	〃		1
294	LPSP3006ZS	〃		3
295	LPSP3006ZS	〃		1
296	LPSP3006ZS	〃		3
297	LPSP3006ZS	〃		3
298	YRS3006BS	〃		1
299	WLS3000	Washer		1
300	LPSP3005ZS	Screw		2
301	*T30906-00A	Control cam ass'y		1
302	T43416-001	Counter bracket		1
303	WLS2000	Lock washer		1
304	LPSP3006ZS	Screw		1
305	LPSP3008ZS	〃		1
306	T30302-005	Collar		1
307	LPSP3008ZS	Screw		1
308	T43523-00A	Checker arm		1
309	T30302-011	Collar		1
310	LPSP3008ZS	Screw		1
311	T30302-005	Collar		1
312	LPSP3008ZS	Screw		1
313	T44734-001	Tension pad		1
314	REE3000	E-washer		1
315	Q03091-146	Washer		1
316	REE3000	E-washer		1
317				
318				
319				
320				

PACKING MATERIALS

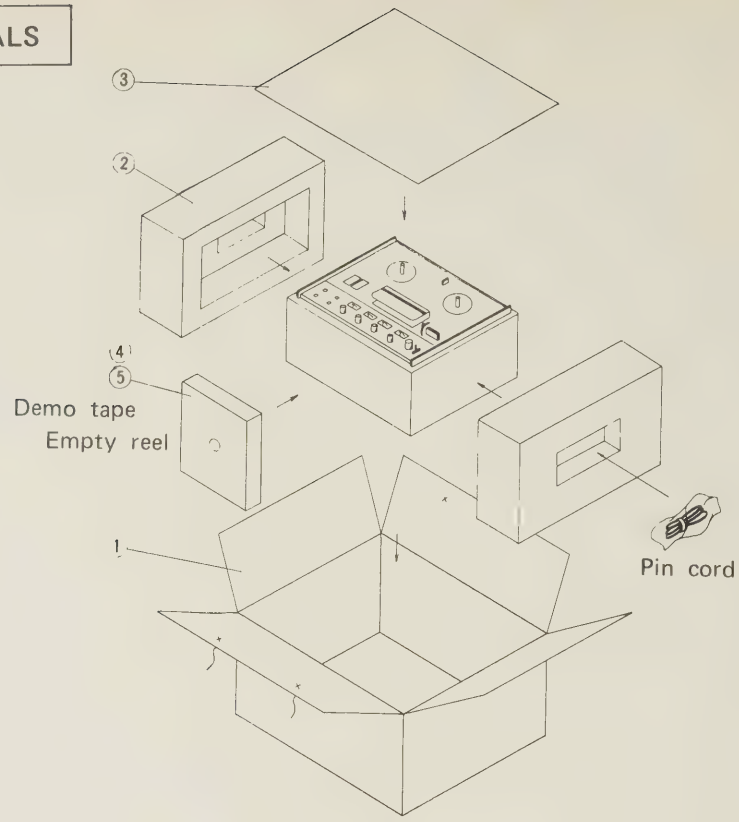


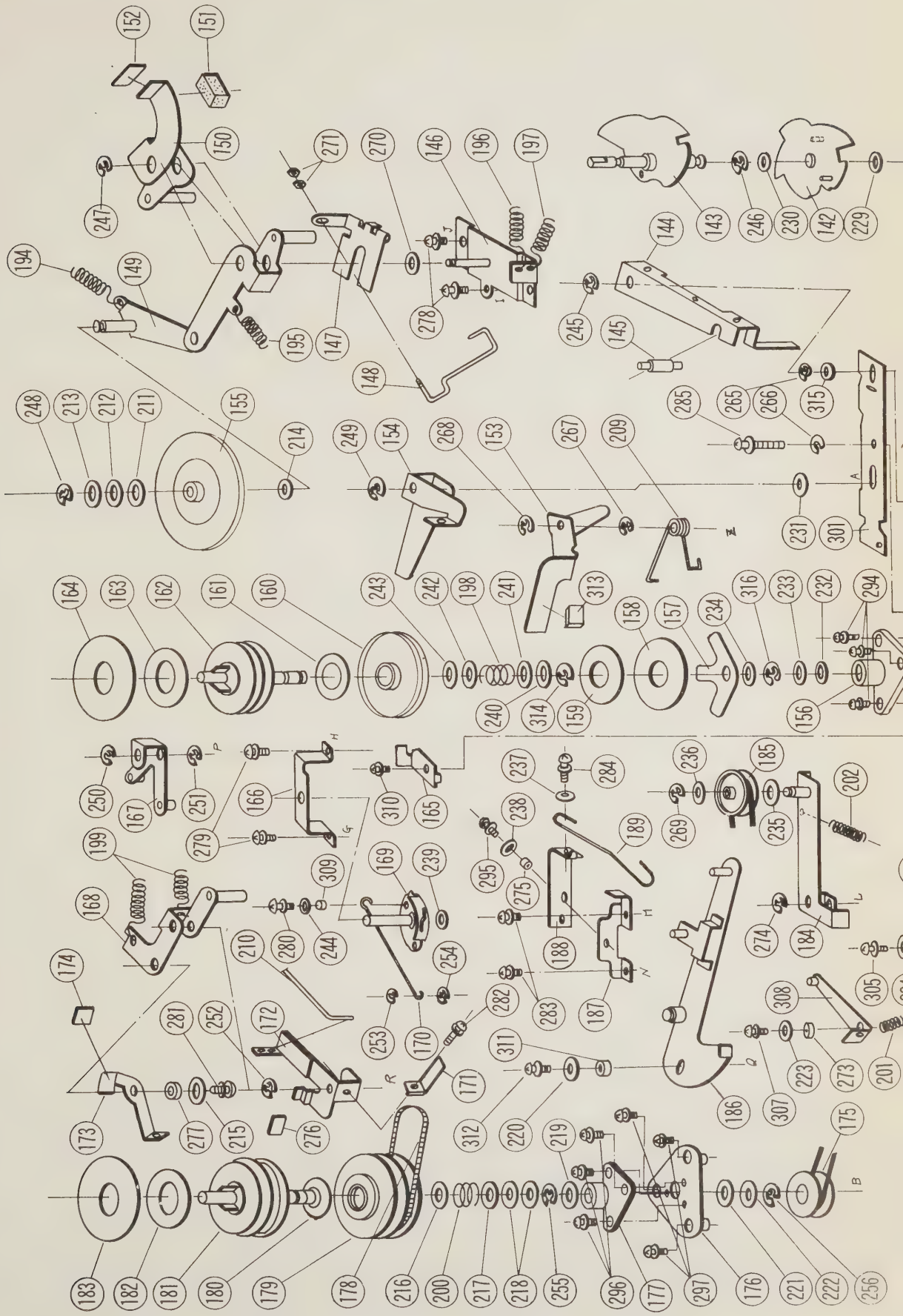
Fig. 54

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
①	T30889-026(4RD-1405) T30889-027(1405U) T30889-034(1405F)	Case		1
②	T46637-001	Cushion	(left and right)	2
③	T30889-029	Top board		1
	T30889-003	Plate		1
⑤	T30889-002	Reel case		1
	T6947-00D	Envelope	For set proper	1
	AP4055A-077	"	For Instruction Manual	1
	AP4056-025	"	For power cord	1
	AP4056A-046	"	For pin cord	1

ACCESSORIES AND ATTACHMENTS

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	DT-456	Demo tape		1
	T3312-032	Empty reel		1
	T30046-001	Pin cord		4
	T44186-001	Reel clamp		2
	4RD-1405-IB 1405U-IB 1405F-IB	Instruction		1
	BT10001	JVC Service Station List		1
	T30994-018	Feature tag	(4RD-1405)	1
	BT20001	Warranty card		1
	T45562-00B	Head cleaning bar	(1405U, 1405F)	1
	Q04742-1	Fuse	(1405F)	2
	Q04742-0.5	Fuse	(1405F)	1

DISASSEMBLY DIAGRAM OF CASSETTE MECHANISM (2)



PACKING MATERIALS

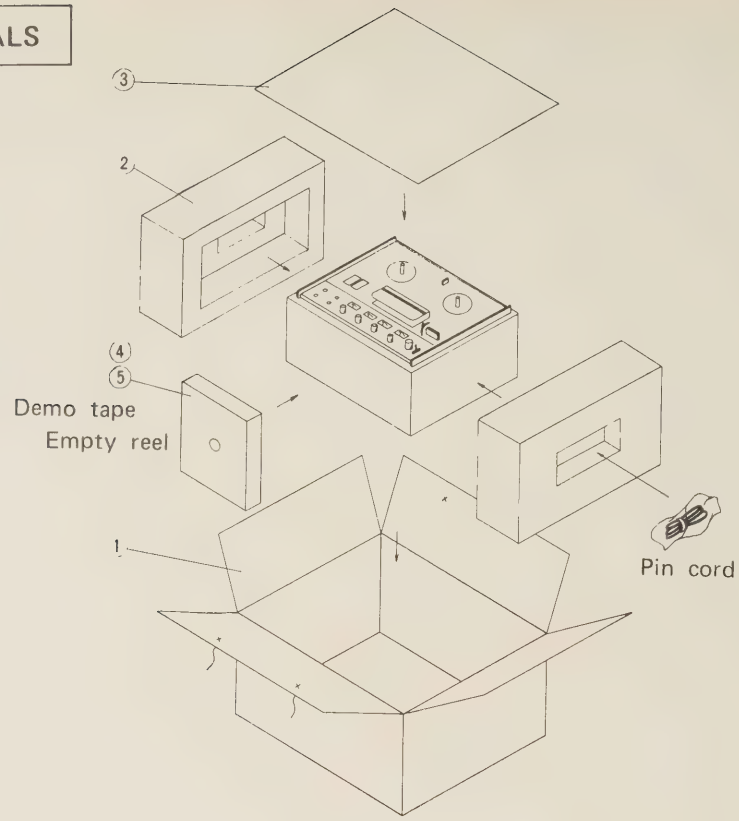


Fig. 54

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
①	T30889-026(4RD-1405) T30889-027(1405U) T30889-034(1405F)	Case		1
②	T46637-001	Cushion	(left and right)	2
③	T30889-029	Top board		1
	T30889-003	Plate		1
⑤	T30889-002	Reel case		1
	T6947-00D	Envelope	For set proper	1
	AP4055A-077	"	For Instruction Manual	1
	AP4056-025	"	For power cord	1
	AP4056A-046	"	For pin cord	1

ACCESSORIES AND ATTACHMENTS

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	DT-456	Demo tape		1
	T3312-032	Empty reel		1
	T30046-001	Pin cord		4
	T44186-001	Reel clamp		2
	4RD-1405-IB 1405U-IB 1405F-IB	Instruction		1
	BT10001	JVC Service Station List		1
	T30994-018	Feature tag	(4RD-1405)	1
	BT20001	Warranty card		1
	T45562-00B	Head cleaning bar	(1405U, 1405F)	1
	Q04742-1	Fuse	(1405F)	2
	Q04742-0.5	Fuse	(1405F)	1

DISASSEMBLY DIAGRAM OF CASSETTE MECHANISM (1)

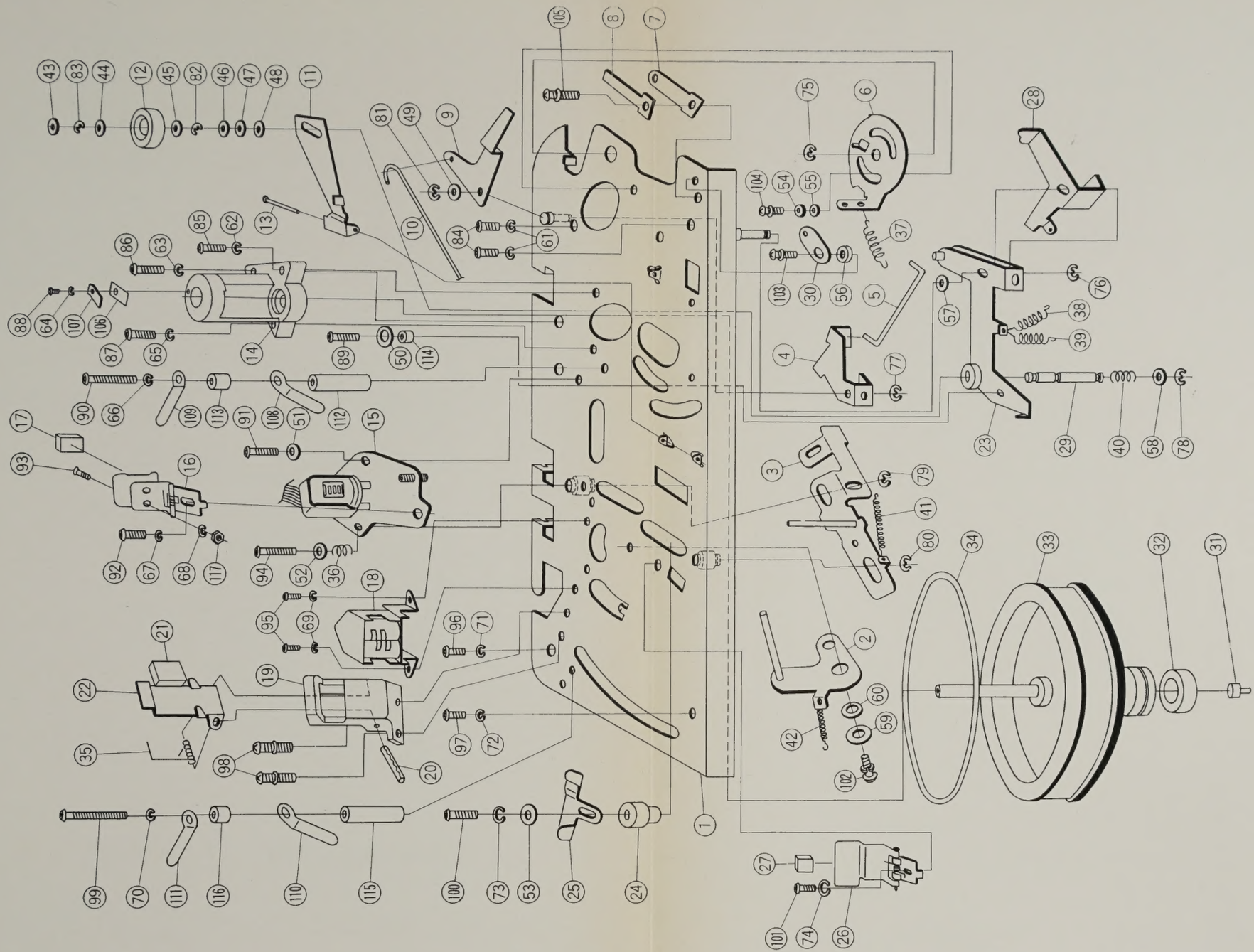


Fig. 52

DISASSEMBLY DIAGRAM OF CASSETTE MECHANISM (2)

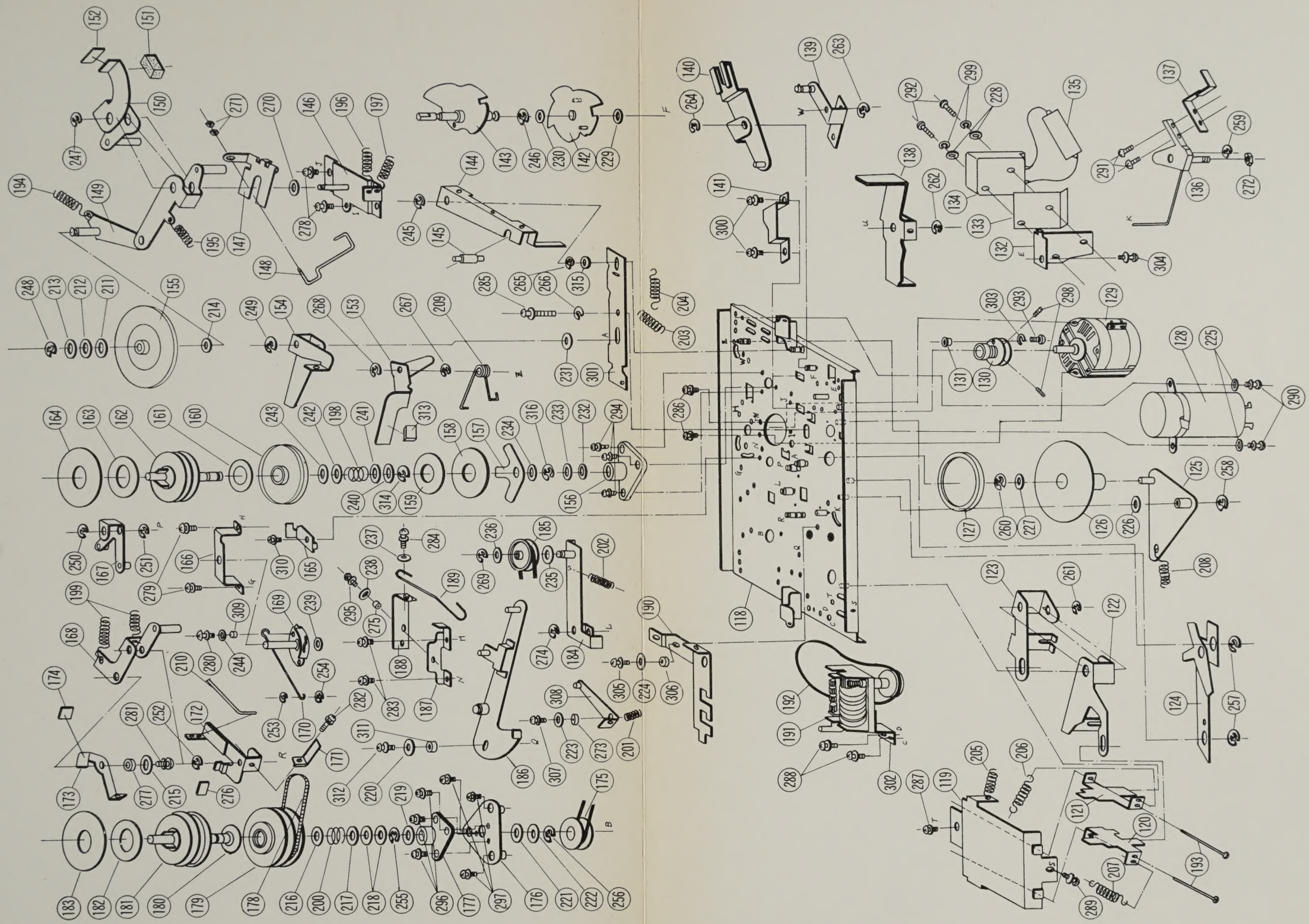
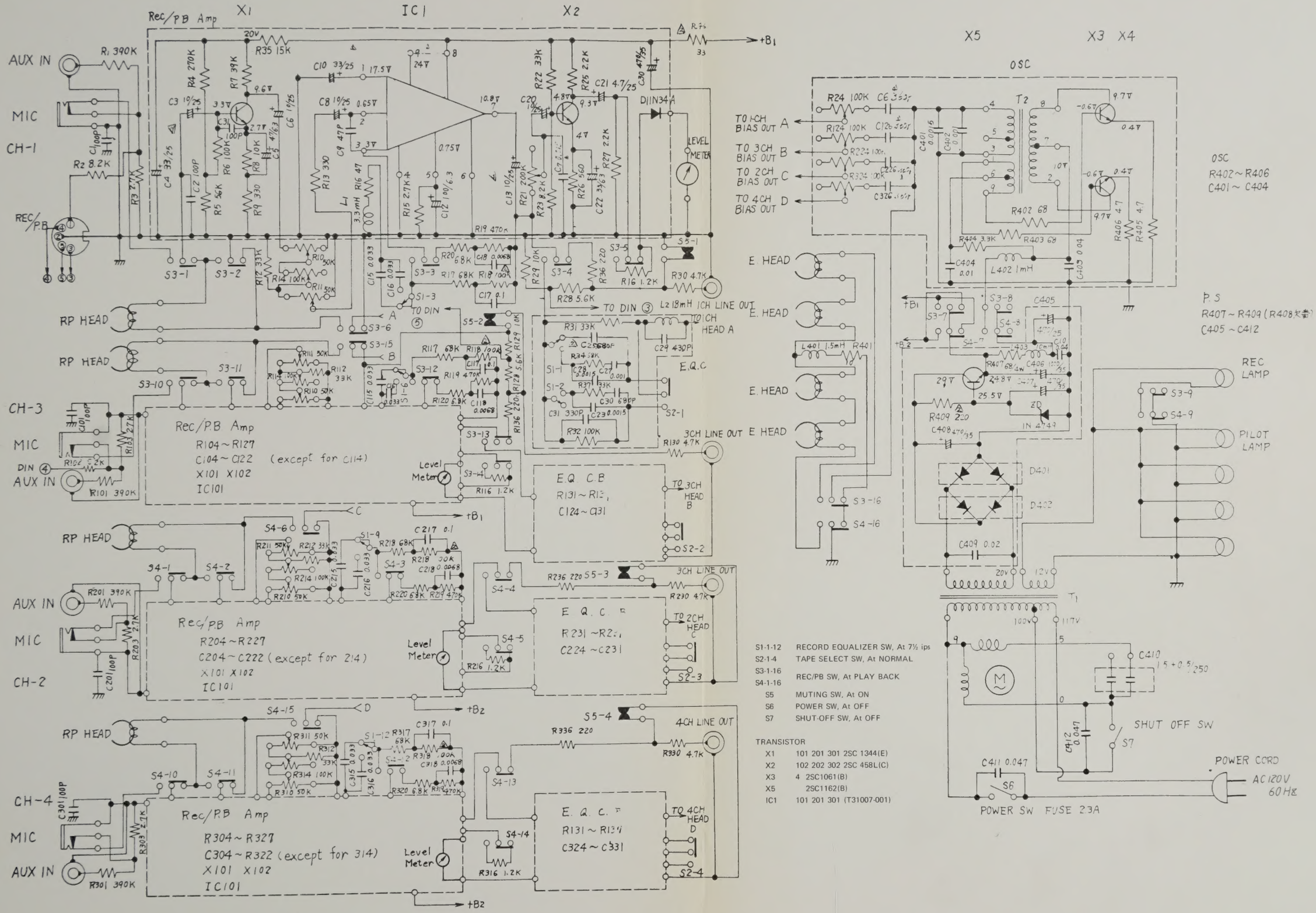


Fig. 53

SCHEMATIC DIAGRAM OF MODEL 1405

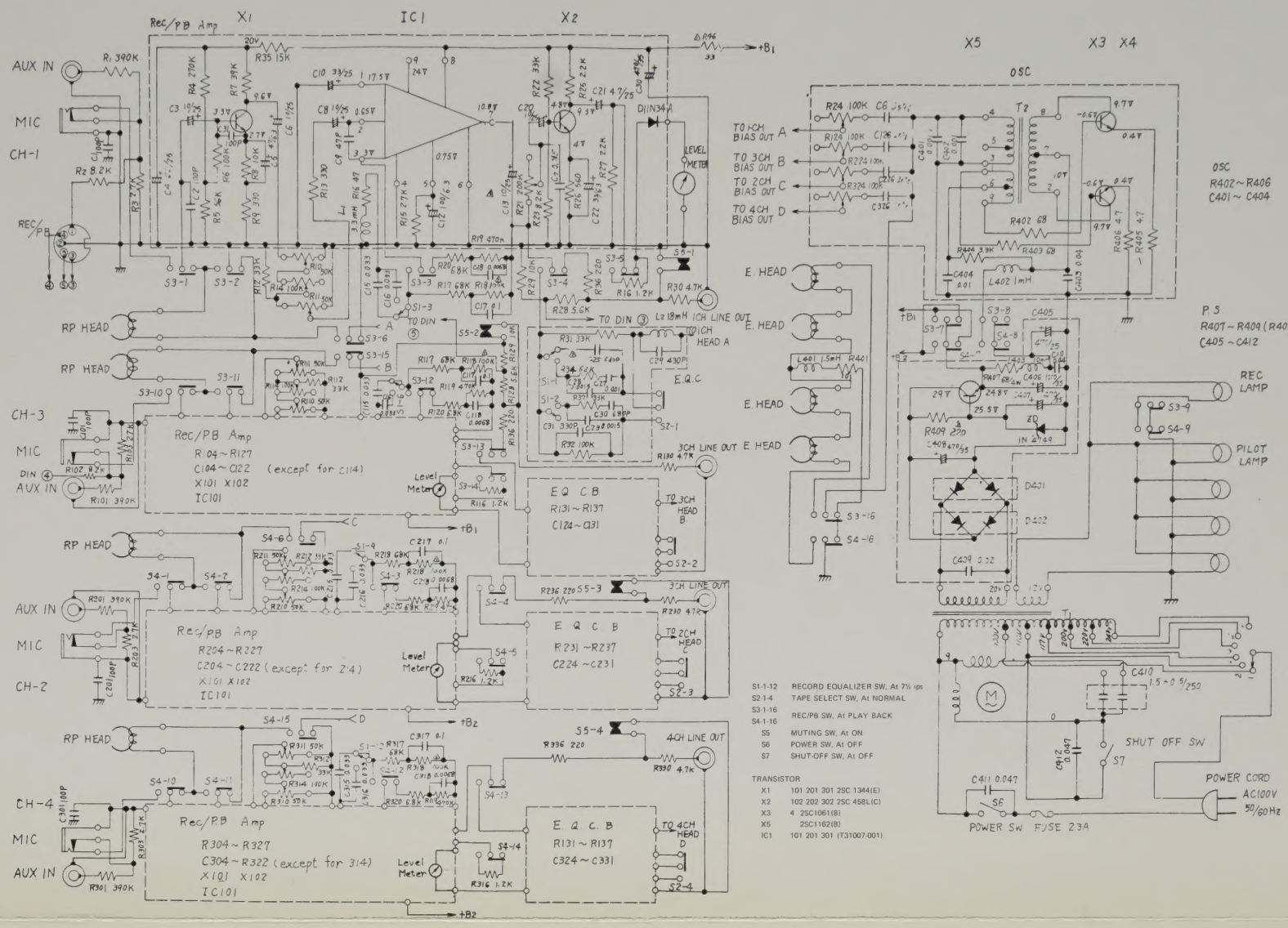


S1-1-12	RECORD EQUALIZER SW, At 7½ ips
S2-1-4	TAPE SELECT SW, At NORMAL
S3-1-16 S4-1-16	REC/PB SW, At PLAY BACK
S5	MUTING SW, At ON
S6	POWER SW, At OFF
S7	SHUT-OFF SW, At OFF

TRANSISTOR

X1	101 201 301 2SC 1344(E)
X2	102 202 302 2SC 458L(C)
X3	4 2SC1061(B)
X5	2SC1162(B)
IC1	101 201 301 (T31007-001)

SCHEMATIC DIAGRAM OF MODEL 1405U



SCHEMATIC DIAGRAM OF MODEL 1405F